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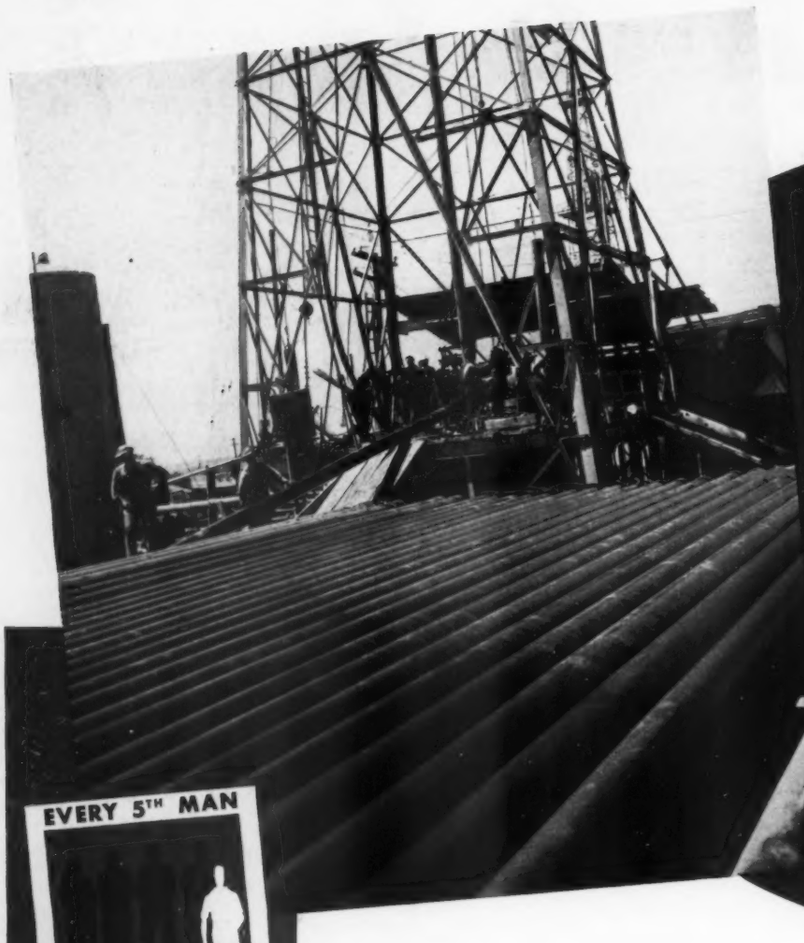

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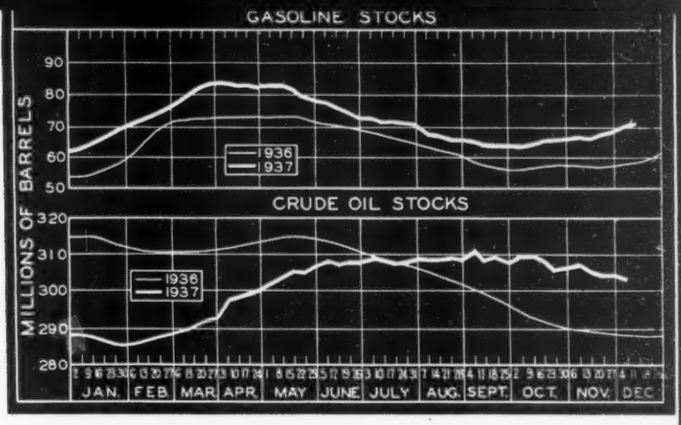

Mark Time as Year-End Nears

THE oil business generally the past week appeared to be moving into a period of marking time to continue until the start of a new year. This usual year-end development is more pronounced at this time due in part to the uncertainty regarding trends in other lines of business.

CRUDE PRODUCTION *3,422,208 barrels daily average—up 35,301 barrels.*

CRUDE STOCKS *303,034,000 barrels as of December 4—down 1,122,000 barrels.*

GASOLINE STOCKS *70,513,000 barrels as of December 11—up 320,000 barrels.*

REFINERY RUNS *3,200,000 barrels daily week of December 11—down 30,000.*

This situation is reflected in the buying, extending from the small jobbers of gasoline and lubricating oils to the major domestic and foreign buyers of crude oil. In refinery and wholesale sales of finished products there is a tendency to reduce purchases to a minimum until after the first of the year. This is a factor in the present market weakness of gasoline, lubricating oils and heavy fuel oils. Among the crude buyers solicitation of new well connections is not as active as it was, although it is known that in some cases their deliveries to refinery connections will increase after the first of the year and their present runs in the field are not as large as these new requirements will be.

In the production end, interest centers in the Texas proration hearing to be held in Austin Friday. The state proration authorities have the job of maintaining a healthy balance between supply and demand in that state without the aid of the Sunday shutdowns in East Texas. It is assumed that, owing to that situation, Texas production will increase over the remainder of the month. Trends in crude stocks continue encouraging with the withdrawals from national storage averaging 150,000 barrels daily for the month ending December 4.

The weak statistical position of gasoline becomes more pronounced from week to week. Stocks on December 4 were 12,497,000 barrels, or 21.6 per cent greater than the corresponding week last year. All refining groups show increases, but 50 per cent of the gain is accounted for by the increases at Gulf Coast and East Coast refineries and major terminals. The East Coast stocks are 26 per cent greater than a year ago and the Gulf Coast inventories have increased 35 per cent. This is in contrast with the situation early in the year, when the coastal statistical situation was strong and weakness was confined to the interior refining groups. While relatively unimportant, owing to the small quantities involved, Rocky Mountain stocks are 72 per cent higher than a year ago and North Louisiana-Arkansas inventories 50 per cent greater. The gain of 8 per cent in California is less than any other area. The obvious remedy for the gasoline situation is further reductions in crude runs to stills.

Daily Average Production for Week

	Dec. 11, 1937	Bur. Mines Dec. est.	Dec. state allowables	Dec. 4, 1937
Oklahoma City	130,625	.....	.....	114,375
Fitts	78,350	.....	.....	82,225
Remainder of State	351,200	.....	.....	359,500
Total Oklahoma	560,175	588,800	550,500	556,100
East Texas	417,815	.....	.....	416,898
West Texas	190,947	.....	.....	190,050
North Central Texas	105,395	.....	.....	105,800
Texas Panhandle	69,761	.....	.....	67,699
East Central Texas	93,954	.....	.....	91,400
Gulf Coast Texas	330,265	.....	.....	322,700
Southwest Texas	110,920	.....	.....	109,797
Total Texas	1,319,057	1,399,800	1,375,046	1,304,344
North Louisiana	70,720	.....	.....	74,870
Gulf Coast Louisiana	168,565	.....	.....	171,400
Total Louisiana	239,285	244,000	253,975	246,270
California	711,750	679,400	679,400	700,000
Kansas	178,875	186,000	176,700	168,775
Arkansas	46,220	33,900	.....	44,110
Eastern Fields	134,150	126,200	.....	132,400
Michigan	52,406	51,800	.....	53,748
New Mexico	107,670	104,100	107,600	104,850
Rocky Mountain area	72,620	77,300	.....	76,310
Total United States	3,422,208	3,491,300	.....	3,386,907

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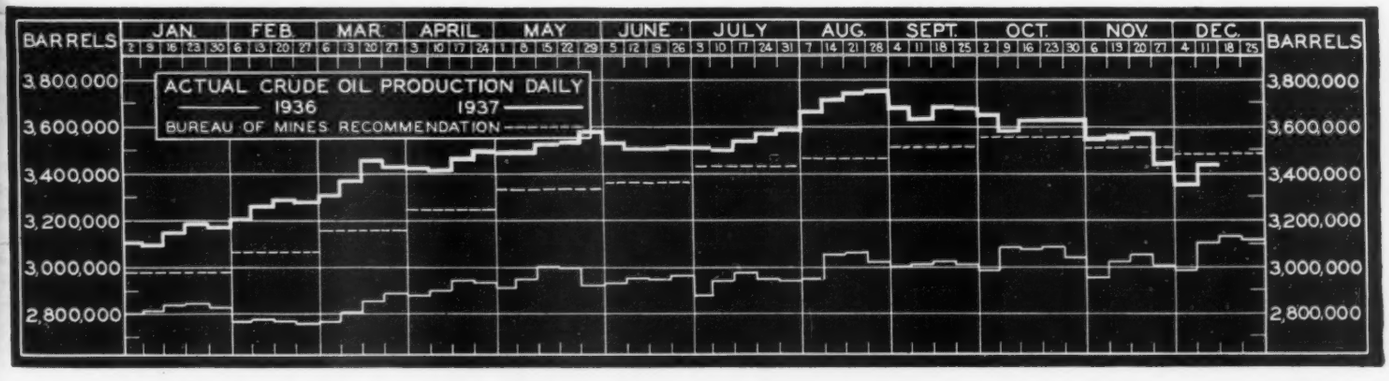


1938 To Be Active Y

By C. O. WILLSON

What is going to happen in crude-oil producing operations in 1938?

This query in various forms, covering the particular interest of the questioner, has been asked more frequently than usual at this year-end, due to the uncertainty regarding general business trends. The questions naturally come from those who serve the industry with processes, equipment and supplies as well as individuals within the business who are projecting their operations over next year or some part thereof.

A conservative answer at this time is that 1938 activity in the producing branch of the industry will at least be on a par with the record-breaking year now closing. Some phases of operations may be less active, but continued expansion in other divisions is issured.

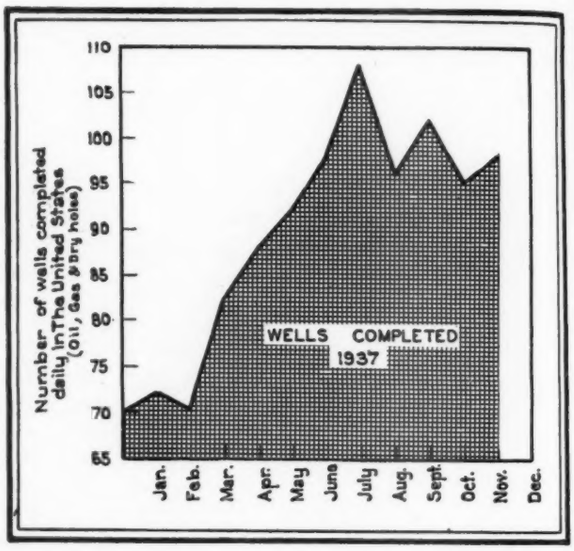
This conclusion is based on information obtained from executives, departmental heads and purchasing agents of major companies, individual producers, drilling contractors and others in a position to know definitely what will take place the first part of the new year, with at least tentative plans for the remainder of the year. Consideration was also given to the predictions of petroleum economists who have made a special study of the basic information on probable supply and demand.

Record Drilling

Budgets of producing organizations center in drilling programs and the operation of a constantly increasing number of completed wells. In regard to drilling, as illustrated in the accompanying chart showing average daily completions, there has been a decline in operations from the peak of summer months, but they are still ahead of the early months of the year and the same period of any previous year. The decrease is largely seasonal and no more pronounced this year than in many of the active years of the past. Part of the decrease is due to the unusual activity earlier in the year which resulted in some of the drilling budgets approaching exhaustion during the fall months.

By the end of the year 33,000 oil wells, gas wells and dry holes will have been drilled in the United States. In footage, due to the greater depths of wells, this exceeds any previous year by a wide margin. This drilling was necessary in order to produce approximately 1,276,000,000 bbls. of crude oil, all but 15,000,000 bbls. of which was absorbed by domestic and foreign refiners or consumed elsewhere. This estimated output for 1937 will represent a gain of 178,000,000 bbls. over 1936, the largest yearly increase in the history of the industry.

Without adding to or subtracting from crude-oil storage next year, it seems reasonably certain that at least 35,000,000 more barrels of domestic production will be required next year. This will mean that daily production will average about 3,575,000 bbls., with a possible peak next summer of 3,850,000 bbls.



With this new peak in requirements in mind most observers in close touch with conditions do not believe that it will be possible to take care of the demand except through a continuance of the active drilling of the past year. Restrictions in production through enforcement of conservation regulations, leasing agreements to expire during the year, larger crude needs of pipe line and refinery connections and the desire to enlarge proven reserves are factors in the 1938 position of producing organizations.

It is true that some companies plan to do less drilling the first half of 1938. Among these are companies which have practically nothing left in the way of proven properties to drill. Others hoping to maintain relatively high allowables in new areas will limit drilling to offset requirements. In most cases operators will continue intensive drilling programs for the very conclusive reason that they need the crude and there is no other way to get it except to complete new wells.

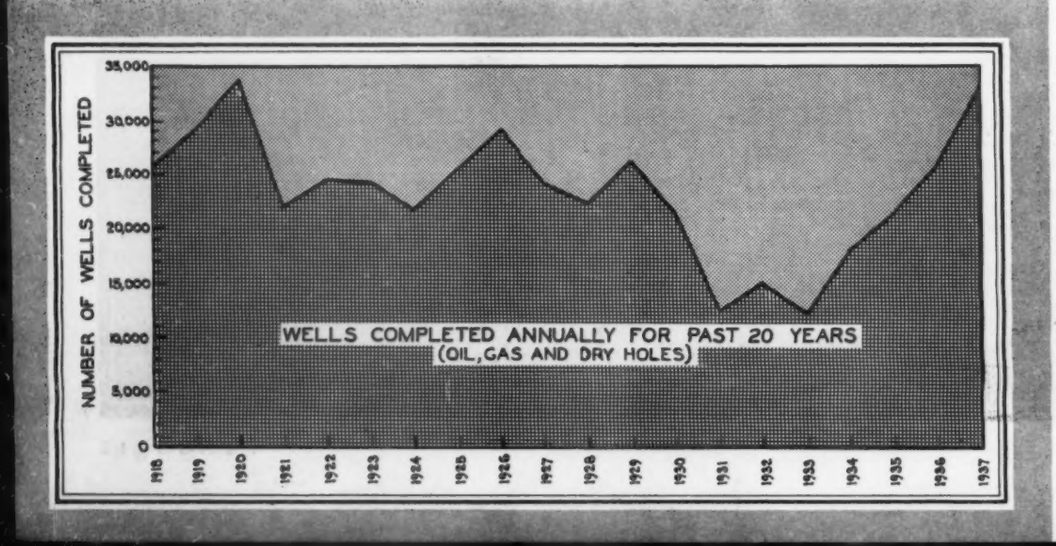
The budgets already prepared reveal the significance of deeper drilling. Most of the new pools of the past years have been below average depths, with important discoveries from 6,000 to 11,500 feet. This means more costly development. A case in point is the budget of one operator which calls for greater expenditures although fewer wells will be drilled.

Wildcat drilling and all other types of exploratory work will continue to be outstanding over a large part of the probable oil area in the United States. The same situation applies in foreign countries. Many companies are not so concerned about obtaining their crude-oil requirements in the next year or two as they are in later years.

Preliminary estimates indicate that more new oil was discovered this year than was produced. The bulk of these new reserves, however, are in four or five areas. In most cases the active development of these new fields will be held back, their owners preferring to maintain the reserves for future years. This means that most of the older pools are being drawn on at a rapid rate. This situation makes mandatory intensive drilling and exploratory work required to discover the additional oil that will be needed.

Statements emanating from engineering and purchasing departments indicate that more attention than ever before will be given to the operation of completed oil wells, which will total approximately 365,000 in 18 states at the end of the year. This figure does not include the thousands of producing natural gas wells located within the oil areas. These older wells were never more the "backbone" of the oil industry than they are at this time. The accomplishments of engineers in maintaining or increasing the production of these older wells through repressuring, gas lift, various pumping practices, chemical treatment, water-flooding and other recovery methods are as outstanding as are developments in exploratory work and drilling.

With production of new wells curtailed in many fields due to the application of state- and self-imposed conservation regulations, many operators are increasing their production by securing more crude from producing leases which they have owned and operated for years. In numerous instances it has been possible to increase output of old properties from 25 to several hundred per cent, with the oper-



Year

ation more attractive from a profit angle than the development of new reserves. Many operators with little proven acreage to drill at this time will direct their 1938 budgets to increasing production with lower lifting costs from existing wells.

1938 Basis

The optimism regarding 1938 operating trends in the oil business is based on several fundamental conditions. The most important of these are the steady consumer demand for its finished products, low prices and favorable inventories at the start of a new year.

With plenty of evidence of curtailment in other industries due to the business recession, and no prospects of immediate change, many observers erroneously conclude that the same situation is certain to develop within the oil industry over the next few months.

This attitude unfortunately includes some within the industry. A sales manager "knows" that he will not sell as much gasoline next year as this year. Somewhat vaguely he cites the fact that a friend who lost money in the recent stock market break has called off his usual winter drive to Florida. Another friend who has a car several years old is not going to turn it in on a new one as he intended to do a few weeks ago. The friend objects to the higher car prices and he also feels that general business conditions are too uncertain for him to assume the responsibility of new car payments.

This sales head assumes these cases are the rule, and fails to give them their proper place in the 1938 outlook. He does not realize that motor-car use and gasoline consumption long since ceased to be dominated by the financial ups and downs of those who in prosperous times can afford winter vacations. The record of the recent depression showed that gasoline belongs in the class with essential foodstuffs and clothing to millions of consumers.

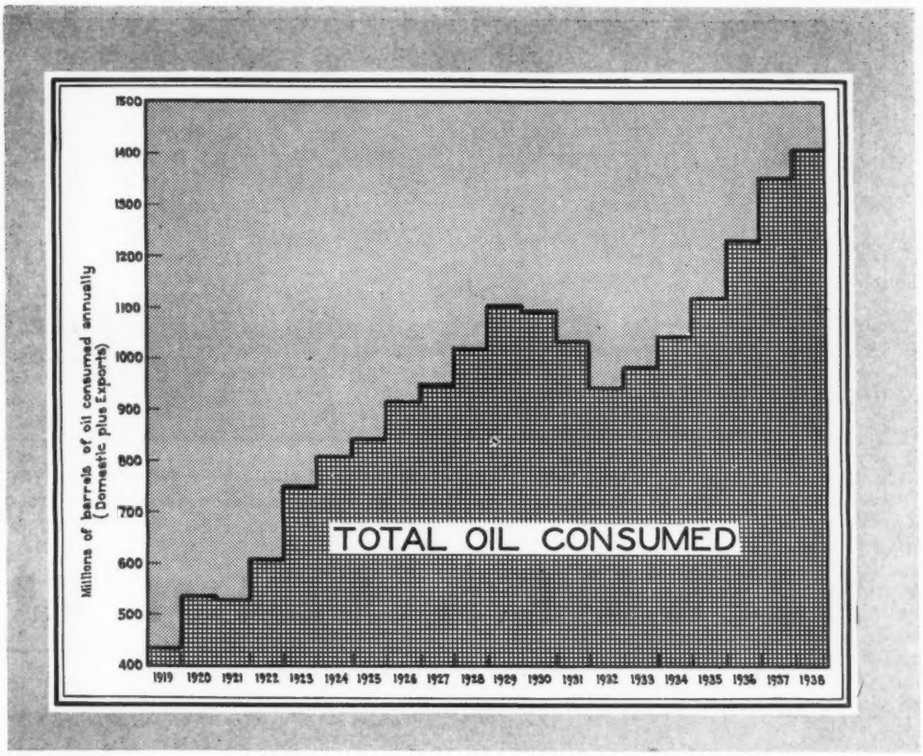
Furthermore he overlooked an important point in regard to the friend with the old car. If he had turned in the old car it probably would have been junked. As it is he will continue to operate the old car. The automobile industry lost a new-car buyer, but the oil business lost nothing.

This situation was analyzed for the country as a whole in a previous article* which showed that even if a large decline in new motor vehicle production materialized next year, an increase in 1938 motor-fuel consumption was assured. This is due to the fact that new-car output over the past five years has steadily exceeded the junking of old cars, so that 1938 will start with more registered cars than any previous period in the history of the industry. There will be more cars on the streets and highways in 1938 than this year, should new car registrations drop 50 per cent.

1929-1931 Record

The significance of this "carry-over" in the number of customers and the strong hold that gasoline has as a "necessity" in times of reduced business activity, were clearly shown in the depression starting in 1929. In that year domestic gasoline consumption established a new yearly peak of 382,878,000 bbls., with new motor vehicle registrations totaling 4,407,263. In 1930 new registrations dropped to 3,036,678, but domestic gasoline consumption increased to 397,770,000 bbls. In 1931 new registrations dropped to 2,222,025, or approximately half the 1929 total, but domestic gasoline consumption continued to expand, the total for that year being 407,843,000 bbls. The following year there was a decline of a few per cent in domestic consumption, but in 1933 the upward swing, which continues up to this time, was resumed. This emphasizes the "depression-proof" position of gasoline consumption.

*"New Motor Fuel Demand Peak indicated for Coming Year," Oct. 14, 1937, The Oil and Gas Journal, page 21.



Note: Consumption for last two months of 1937 and all of 1938 estimates.

While motor fuels to a large extent are the yardstick which determine the industry's operations, the gains in demand for some of the other petroleum products have been even greater. The latest reports of the Bureau of Mines, covering the first 10 months of this year, show the following increases in total demand (domestic demand plus exports) over the same period in 1936: Kerosene 10.1 per cent; gas oil and distillate fuels 21.2 per cent; residual fuel oils 7.5 per cent; lubricating oils 12.3 per cent, and petroleum wax 8.9 per cent. The total demand for all oils as shown in the accompanying chart is 10.5 per cent greater than in 1936.

The demand for many commodities has been reduced over the past several months due to large advances in prices. The recent recession in business has been explained as being due in part to a consumers strike against advancing prices. Here again the oil business occupies a peculiarly strong position, and will continue to do so in 1938. The latest report of the Bureau of Labor Statistics shows that the October price index was 61.7 of the 1926 level, slightly lower than in September.

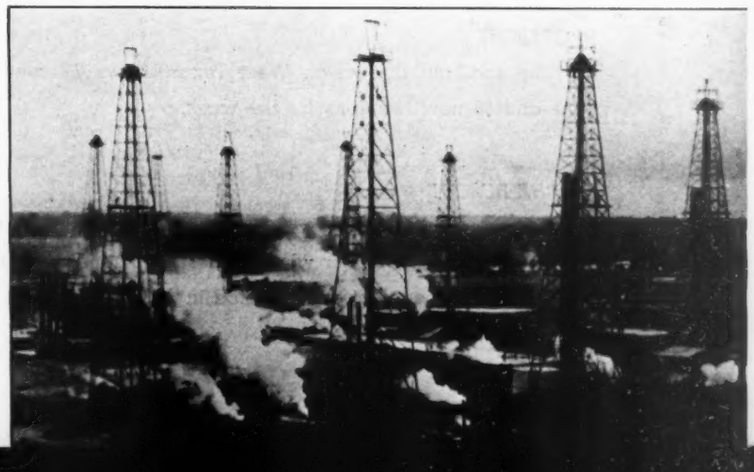
The situation in regard to gasoline prices is particularly strong, and explains why there have been no complaints from consumers regarding prices. The average net price for regular-grade gasoline in 50 representative cities, exclusive of the federal and state taxes, is slightly more than 14 cents per gallon, practically the same as a year ago and only 1.5 cents per gallon above the depression low of 1933.

Finally there is the inventory position of the industry. While it is admitted that gasoline stocks should be several million barrels less to assure a healthy market situation, the inventory position of the industry as a whole is satisfactory.

This situation can best be shown by comparison. At the end of 1929 the stocks of all oils totaled 689,497,000 bbls., of which 428,445,000 bbls. were refinable crude oil. This represented about eight months' supplies based on the consumption of that year. This year will end with stocks of refinable crude at approximately 300,000,000 bbls., or 128,000,000 bbls. less than they were eight years ago. There will be a similar decline in stocks of all oils. These stocks will represent approximately 150 days' supply. Stocks of refinable crude based on days' supply have decreased approximately 50 per cent from the high of a few years ago.

This situation means that the industry and its customers do not have large inventories to fall back upon for next year and producers must furnish new supplies to keep pace with new demands.

Deep drilling Evangeline field, Arcadia Parish, Louisiana



Acme

Three abandoned merchant ships again serve a useful purpose as oil storage ships, 18 miles out in the Gulf of Mexico off the Louisiana Coast and 120 miles from New Orleans, where active field is located

SPARKS FROM THE NEWS

SANITY

A few refiners, who of course would like to participate more fully in the lusty market for heating oils, are steadfastly refusing to pile up burdensome inventories of gasoline in order to do it.

EL DORADO NO MORE

El Dorado, once the major oil field of Kansas, will be relegated to the stripper class if Butler County operators have their way with the Corporation Commission at a hearing in Wichita Monday.

HOBBS EXTENDED

Just about the time most observers decided the Hobbs field of New Mexico has been defined someone steps out and enlarges the producing limits. This happened the past week when a 2,500-barrel well extended the field to the northeast.

MORE MARKETS

Kansas producers are excited over the prospect of losing part of their market, so they are going to meet at Wichita Friday and try to do something about it.

SPOTLIGHT

The spotlight thrown on West Texas shows 77 completions and 59 new locations for the week.

TO THE RESCUE

Exports with a 24 per cent gain materially helped the gasoline market in October when domestic demand was only 2.5 per cent higher than same period in 1936.

CONSISTENCY?

At Washington the Federal Trade Commission is instructed to investigate "monopolistic practices" as the cause of higher prices. Fixed and higher coal prices become effective Thursday at the instigation of the same government.

THIRTEENTH MONTH

A major oil company, despite increased wages and fewer hours, went one step farther and on Wednesday added a month to the year with a bonus equal to 30 days' pay.

SUCCESSFUL PLUGGING

A deep test in Jim Wells County, Texas, was a failure at 8,162 feet. Plugged back to 6,585 feet it brought in a new field.

NO CONSUMER STRIKES

Continuance of low retail prices despite rising costs is main reason oil industry's outlook for 1938 is favorable. There are no consumer strikes directed at petroleum products.

PAST EXPERIENCE

Governor Marland has invited federal officials to attend the price-stabilization conference at Hot Springs next month. Past experience indicates that approval of one governmental department may mean nothing to another.

MAJOR PROBLEM

With considerable opposition to continuance of East Texas Sunday shutdowns and wells on a marginal production basis, Texas is confronted with a major problem as to how the field can be operated on a conservation basis in the future.

Oil Industry May Be Affected by Price-Fixing of Coal

By HENRY D. RALPH

WASHINGTON, Dec. 13.—The oil and gas industries are watching with mingled interest and concern the activities of the National Bituminous Coal Commission in attempting to fix minimum prices of every grade of soft coal produced by practically every mine in the United States. Minimum f. o. b. mine prices have already been fixed for all the eastern fields effective December 16, and price orders for the western districts are being prepared, and already the commission is being deluged with protests from producers and consumers.

To the extent that the new minimum prices will raise the general level of the cost of coal to consumers, they will expand the market for fuel and diesel oil, natural gas and petroleum coke. But this is not the only interest the activities of the coal commission hold for the petroleum industry, for if it develops that competitive fuels encroach too largely on the market for coal it will certainly give impetus to proposals for a tax on fuel oil or other legislation to equalize this competition. And in the background lurks the possibility that the petroleum industry itself may some day be subjected to the same sort of federal control as the soft coal industry is struggling with today.

Price-Fixing

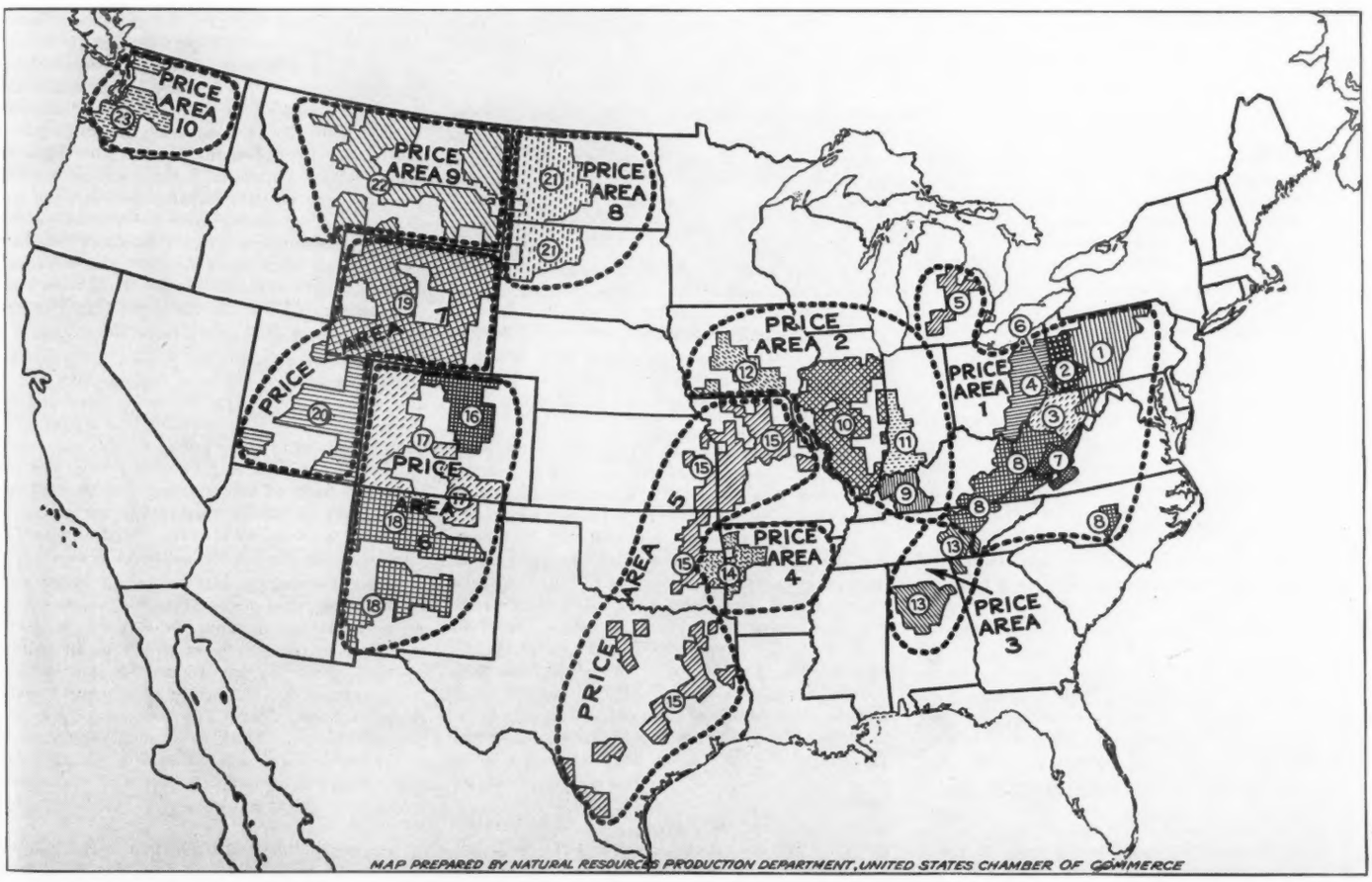
Thursday, December 16, the government's first attempt at price fixing for a major industry becomes effective in the sale of bituminous coal.

It is important to the petroleum and natural gas industries because the fixed prices apply to a competitive industry. It is also significant due to the fact that the price-fixing program is a "test" to determine its possible application to other natural resource industries.

The Oil and Gas Journal's Washington representative summarizes the position of the government and the oil industry in this article.

How much the new coal prices will affect the competitive fuel market is a question which no one in Washington will attempt to answer. No statistics are available comparing the new prices with those prevailing during the past year or two, partly because coal prices fluctuate seasonally and have varied widely because of different characteristics of coal and the bargaining power of large consumers. It is generally agreed that prices for railroad and industrial grades of coal are going up considerably.

Officials of the coal commission assert that in many cases the prices for domestic grades of coal have been lowered, but this is contradicted by the protests of a great many consuming interests. The new prices are all minimum prices f. o. b. mine, and as the commission has no direct control over the margin taken by wholesalers and retailers, it is impossible to predict how changes in the mine


PRICE AREA 10
PRICE AREA 9
PRICE AREA 8
PRICE AREA 2
PRICE AREA 1
PRICE AREA 5
PRICE AREA 4
PRICE AREA 3
MAP PREPARED BY NATURAL RESOURCES PRODUCTION DEPARTMENT, UNITED STATES CHAMBER OF COMMERCE

Coal producing districts and price areas of bituminous coal act. Price Area 1 includes producing districts 1 to 8 inclusive—Area 2, Districts 9 to 12—Area 3, District 13—Area 4, District 14—Area 5, District 15—Area 6, Districts 16 to 18 and California—Area 7, Districts 19, 20 and Idaho—Area 8, District 21—Area 9, District 22—Area 10, District 23 and Oregon and Alaska

prices will be reflected in the retail prices of coal to householders.

The prices fixed by the commission are minimum prices, and there is no agreement as to whether these will tend to be the maximum prices. Officials of the commission generally believe that competition will keep the general level of coal prices down very close to the minimums set, whereas coal producers argue that since the minimum prices are based on cost only, there is no sense in remaining in business unless the prices are sufficiently above the minimum to give them a fair profit.

Neither are the new prices permanent, and in recognition of this fact the commission has ordered that no contracts be made for longer than 30 days. Even before the schedule went into effect, the commission changed some of the prices for railroad coal in the Alabama district on protests from producers, and has scheduled a hearing for December 21 to receive protests from consuming interests.

Going Up

There is a consensus, however, that coal prices as a whole are going up moderately and in some cases drastically. The bituminous coal industry, taken as a whole, is said to have sold its product at an average loss of 11 cents per ton last year, and since the minimum prices are supposed to be based on the weighted average cost of production, district by district, the assumption is that the general average level of coal prices will be increased by at least that amount, even though prices on some kinds of coal may be reduced slightly. The coal commission has contended that producers have been selling at a considerable loss to large industrial purchasers and attempting to recover these losses by exorbitant prices on household grades. Some persons have estimated that the operating costs of industries in this country will be increased by from $40,000,000 to $200,000,000 by the new coal prices, pointing out a closer estimate is impossible because of the wide range of prices for industrial coal prevailing in the past.

A conference of consuming interests, called by the Consumers' Counsel to consider the new price schedules, was told by James F. Brown, director of schools of Cleveland, Ohio, that these new prices will cause the entire school system of Cleveland to burn oil instead of coal, and he predicted that the entire Cleveland industrial area will follow the same course. He declared that one high school in Cleveland already burning oil had a fuel bill last season of $2,321, whereas at present prices for coal the bill would have been $2,761 and under the new prices $3,169.

However, the majority of the consumers at the conference, as well as officials of the office of the Consumers' Counsel, professed themselves unable to make any predictions regarding the competitive fuel situation until they have had some actual experience with the new bituminous coal prices.

As regards household fuel, a small change one way or the other in the delivered price of bituminous coal may have little effect on the fuel oil market. In the past many home owners have been willing to pay somewhat higher fuel bills to get the convenience of oil or gas heat, but recently satisfactory automatic coal stokers have been developed for home furnaces which in some regions have provided stiff competition for oil burners, so merchandising methods of equipment installers may be a greater factor than a small change in the price of coal.

On the other hand, industrial users, particularly those who purchase coal directly from the mines, will certainly be faced with very considerable increases in their fuel costs, and because they are able to calculate fuel costs quite accurately, such users may show an increased interest in converting their plants to use of fuel oil or natural gas.

The minimum price schedule established by the coal commission is exceedingly elaborate, but it follows a formula laid down by the revised Guffey act. The philosophy of this act is that bituminous coal is a "sick" industry, with excess productive capacity resulting in uneconomic methods of operation and cutthroat price competition, causing low wages to employes and losses to operators. Therefore minimum prices f. o. b. mine are established at the level of the weighted average cost of production in the district on the theory that mines of average efficiency will be able to break even, while those which are grossly inefficient will not be able to drag their competitors into bankruptcy with them by selling coal at ruinously low prices.

The new prices are compulsory for all members of the bituminous coal code set up in the Guffey act. To insure widespread adherence to the code, the act imposed a tax of 1 cent per ton on all coal sold by code members and a tax of 19½ per cent of the fair market value of coal sold by nonmembers. As a result, the producers of more than 96 per cent of the tonnage of the nation have subscribed to the code. There are exemptions for intrastate operators, but the commission has indicated it will apply this exemption narrowly by its first ruling on this subject which held that all coal sold in the state of Ohio affects interstate commerce and is therefore subject to the code and to the new prices.

The Guffey act divides the soft coal industry into 23 producing districts and 10 minimum price areas. The prices effective December 16 apply to price areas 1, 2, and 3, embracing the 13 producing districts east of the Mississippi and including the state of Iowa. A supplemental schedule effective December 27 establishes minimum prices for area No. 4, which includes mines in Arkansas and eastern Oklahoma.

Classification Factors

The first step in establishing minimum prices was to classify every kind of coal produced by every mine in the country, because the value of coal depends upon its physical characteristics and large buyers customarily purchase on the basis of analysis. This classification took into consideration such factors as heat content, volatile matter, per cent of ash, sulfur, and related characteristics. The commission followed the methods of coal analysis commonly used in the past, but its conclusions are published simply in a table of key symbols which consumers claim does not give them sufficient information on which to compute the new prices on the particular kinds of coal they have been using.

With classification completed, the commission determined the weighted average cost of producing coal in each district. The exact method used is being kept secret, over the protests of the Consumers' Counsel, but the act required that "the computation of the total cost shall include cost of labor, supplies, power, taxes, insurance, workmen's compensation, royalties, depreciation and depletion (as determined by the Bureau of Internal Revenue in the computation of the federal income tax), and all other direct expenses of production, coal operators' association dues, district board assessments for board operating expenses only levied under the code, the reasonable costs of selling and the cost of administration." Coal producers claim this formula includes nothing for interest on investment or for profit, while others assert the allowances for depreciation and administration may conceal a considerable element of profit.

The minimum price schedules are highly complicated affairs. First, there is a table of key symbols showing the classification or type of coal produced by every mine in the district. Next, there is a table showing the sizes of coal produced in each classification. Finally there is a table showing the f. o. b. mine price for the district for each size of coal or a designated classification symbol. This table is further complicated by the fact that the minimum prices in any producing district may vary depending on the marketing areas in which the coal is sold.

The prices for area No. 4 are uniform throughout the United States, but in the eastern producing districts there is a different table of minimum prices for each of several marketing areas, and the commission has established 157 market areas throughout the country. This was done in an attempt to equalize the competition of various fields in reaching certain markets.

Further Complication

There is still another complication which does not affect delivered prices of coal but which does affect the competitive conditions of mines in a single area. Several shipping points are designated in each of a number of producing districts, and it is provided that mines having a higher freight rate to a certain marketing area than this designated shipping point may cut under the established minimum prices by as much as 35 cents per ton to equalize freight rates, and mines having a lower freight rate to a designated marketing area than that applying from the rate base must increase the minimum prices by an amount sufficient to equalize the actual freight rate but not in excess of 35 cents per ton. The interesting fact about this is it forces the use of the so-called basing point system of pricing which has been under so much attack in congress and which the Federal Trade Commission is attempting to break up in pending cases against the cement and the cast iron pipe industries.

The National Bituminous Coal Commission is officially a part of the Department of the Interior, and the Guffey act also created another office in the Department of the Interior known as the Consumers Counsel of the National Bituminous Coal Commission. The Consumers Counsel, however, has no direct connection with the commission, but stands on the outside as a critic and a check. At present there is great hostility between the commission and the counsel, and the counsel has filed with the commission a long petition setting forth various complaints and grievances and demanding that the commission make public the data on which it classifies coal and ascertains producing costs.

The counsel sponsored a meeting of consuming interests in Washington last week which petitioned the commission to postpone the effective date of the prices, to give the Consumers Counsel and consumers generally an opportunity for a hearing on the prices, and to make public its data on classification of coals and on minimum prices. The prevailing opinion at this meeting was that all coal prices will be raised materially, but the price structure is so complicated few cared to hazard an estimate as to the amount of the increase.

While the coal commission has no direct jurisdiction over retail prices, for some reason not yet explained it did set minimum delivered prices for coal in every town in the state of Iowa in addition to mine prices for coal produced in that state, although elsewhere in the country its prices are confined to f. o. b. mine. The commission has also promulgated marketing rules and regulations defining fair trade practices and to a certain extent controlling the margins of jobbers and wholesalers, which may or may not ultimately have some effect on delivered prices.

The competitive situation in the fuel market, therefore, is more uncertain now than it has been. Coal prices generally will undoubtedly be on a higher level, but how much, and what markets will be most affected will be known only after the new prices have been in effect for some time.

Consumption Gains in Asphalt-Road Oil

Underwood & Underwood

B. L. Boye of Socony-Vacuum Oil Co., president of the Asphalt Institute

MEMPHIS, Tenn., Dec. 13.—Hundreds of engineers from government and private enterprises mingled here this week with producers of asphalt and their technicians at the eleventh annual conference sponsored by the Asphalt Institute and the Association of Asphalt Paving Technologists. This year's program was studded with names of federal government engineers, including several from the Army Engineering Corps which is showing increasing interest in the availability of asphalt for river control and harbor protection.

As in the past, however, the bulk of discussion was on the use of asphalt in highway construction work or directly related subjects such as soil stabilization which is growing more popular in the inexpensive construction and maintenance of lateral roads throughout the country. An entire afternoon was devoted to the discussion of stabilizing various types of soil. The broad term soil stabilization, one of the newer applications of asphalt to road construction, offers prospects of becoming increasingly important.

During the first nine months of 1937, asphalt and road oil consumption amounted to 4,478,692 short tons, a gain of 161,324 tons, or 3.7 per cent over the same period in 1936.

E. F. Kelley, chief, division of tests, U. S. Bureau of Public Roads, breaks down the general soil stabilization term into three components, fill construction, improvement of poor subgrade conditions, and construction of base courses for road construction. In his address, Mr. Kelley suggested the study of durability of bituminous stabilized bases might show that the cracked residues will give good results in this work, pointing out that material thus prepared has not always given satisfaction in pavements. Since soil stabilization by use of bitumen is no more than five years old in practice, the question of stability is somewhat of an unknown quantity in the road building technique, Mr. Kelley said.

Road Bases

"Stabilization of road bases," said Mr. Kelley, "is without doubt the most important development of recent years in the field of low-cost road construction. This development makes it possible for us to visualize the improvement, at reasonable expense, of thousands of miles of secondary roads that otherwise could not be reached with the construction funds that are available. For this we are indebted to the research workers whose painstaking observations in the field and in the laboratory have given us our present knowledge of the fundamental principles. That this research, which has been so successful in the field of mechanical stabilization, must be continued and extended in the field of bituminous stabilization is evident. It does not require a prophet to foresee the enormous possibilities of bituminous stabilization both from the standpoint of improved road construction and from that of increased consumption of bituminous products."

Finishing road-mix surface, using stone and cutback asphalt

The possibility of using cracked asphalt in soil stabilization probably will be of particular interest to petroleum refiners. If the possibility proves a reality, asphalt production might be easily incorporated into many refining processes without sacrifice of other products and would materially extend the range of crudes suitable for bituminous production.

Much has been done toward this end already, but methods of test to convince highway departments of cracked asphalt stability must be developed before such material will be accepted on a wide scale basis. Premature loss or absence of ductility of cracked asphalts used with unsatisfactory results in some paving work is primarily responsible for many specifications in asphalt which restrict the sources from which material may be drawn. There is still considerable doubt over the value of the oliensis test which is intended for the purpose of determining to what temperature the material has been heated in refining.

Loss of ductility is still a major problem in production and application of asphalt. In a paper presented at the conference by Prevost Hubbard, chemical engineer, the Asphalt Institute and Henry Gollomb, chemist, Bureau of Highways, Borough of Manhattan, the hardening of asphalt with relation to development of cracks in pavement was considered from several angles. Certain elementary characteristics of asphalts in the aging process suggest that some of the current difficulties may be eventually solved by the chemical industry in collaboration with refiners.

"When asphalt hardens in mass at atmospheric temperatures," wrote Hubbard and Gollomb, "all but the exposed surface is protected from external agencies such as air, moisture and light. It is known that contact with air at elevated temperatures produces rapid chemical changes in asphalt which are not reversible and that such changes harden the asphalt. As the temperature of the asphalt is reduced the speed of reaction is slowed

Improving country road; grading prior to placing asphalt surface

down and at normal atmospheric temperatures is hardly noticeable on asphalt in mass because it is limited to a very slight depth below the surface, and the volume of altered asphalt represents an extremely small proportion of the total mass.

Experiments and literature were cited by Hubbard and Gollomb showing that the hardening of asphalt appears to be largely a matter of oxidation and the authors suggest that part of the difficulty, at least, may be overcome by maximum protection against exposure to air at central mixing plants and in transit to the point of application. Attention is directed to the accelerated rate and density of hardening as temperature is increased in the presence of air.

In hot-mix construction the softer the original asphalt the less likely it is to harden dangerously during the mixing operation.

"Such data as is available," concluded Hubbard and Gollomb, "does not prove that between different asphalts the source from which it is obtained can be considered as a measure of its resistance to hardening. Some differences have been shown to exist between individual products, however, and there is definite need for a reliable test which can be generally used for this purpose."

In general the use of asphalt as soft as possible without reducing stability below the minimum required to carry the traffic load is urged. Present practice and trends indicate that refiners are facing a period of softer asphalt requirement. By controlled oxidation it should now be possible, in the light of research knowledge, to predetermine the penetration point best suited for each particular job.

Latest practices and developments in the use of asphalt in river and harbour construction were explained by Lt. Col. W. F. Tompkins, district engineer, U. S. Army, New Orleans, La.

There is a gradual, but pronounced trend toward greater use of cut-back asphalts which is also contributing to the extension of raw material available for asphalt production. Increasing amounts of asphalt are being produced under vacuum which is now accepted as the most satisfactory refining practice yielding products more nearly in keeping with the miriad of specifications which continue to vary widely between states. There is some movement toward more uniformity of specifications in pavement asphalt, but their lack of correlation between states and even counties continues to be the most troublesome problem confronting the asphalt producers. Students of this particular phase of the asphalt business can extend no hope for an early simplification, but are encouraged by gradual elimination of the less important specifications.

Petroleum Electric Power Club Meets at Shreveport

By GEORGE WEBER

SHREVEPORT, La., Dec. 10.—Representatives of the 27 public utility companies met in Shreveport at the ninth annual conference of the Petroleum Electric Power Club. About 50 men, visitors, guests, and officials of the member companies, convened to discuss the problems and progress of utility companies in the Mid-Continent and Gulf Coast areas in serving the oil business in their respective districts.

F. M. Austin, of the Houston Lighting & Power Co., Houston, Tex., president of the club, opened the meeting. The first day was occupied by the presentation of three papers covering the engineering and economical problems attending the cooperation of utilities in serving with purchased electric power the three main divisions of the petroleum industry; production, pipe line and refining. Following each paper there were lengthy discussions, conducted in an informal manner, where individual problems and specific cases of various types of installations were covered.

Members met in a closed session on Friday for the dispatching of club business, including reports of officers and committee chairmen. Directors met and elected officers for the coming term, who took office immediately.

C. N. Robinson, of the Public Service Co., Tulsa, was elected president of the club for the coming year. He is supported in office by O. W. Jones, of the Central Power & Light Co., Corpus Christi, Tex., as vice president; and H. E. Roberts, of the Empire District Electric Co., Joplin, Mo., as secretary and treasurer.

George Weckel, Wichita, Kans., was elected a director, and these members of the board were reelected: W. H. Stueve, Oklahoma City; F. A. Graham, Kansas City, Mo.; J. E. Elliott, Shreveport, and L. A. Armstrong, Chicago.

Following the address of welcome by M. T. Walker, vice president of the Southwestern Gas & Electric Co., host company in Shreveport, A. B. Morgan, of the Edison Electric Institute, New York, discussed the problems facing utilities in coming legislation in Washington.

The first paper dealing with electrical service in the oil industry was entitled "Purchased Electric Power for Production," by R. E. Patrick of the Kansas Gas & Electric Co., Lawrence, Kans. Citing the nine principal advantages in use of purchased electrical power, he quoted pertinently from the records of oil companies in the district served by his company.

In the discussion which followed, load and transmission problems encountered in serving oil fields were aired, and the newer types of pumping equipment were studied. Improvements in electrical equipment during the past year and probable trends for the future were reported by representatives of equipment companies. Improvement in service to production companies, and optimum expansion of generating capacity for the service of field demands were also considered.

F. A. Graham, of Kansas City Power & Light Co., Kansas City, Mo., in his paper, "Purchased Electric Power for Pipe Line Pumping," reminded members of the need for cooperation among the various power companies for uniformity in service to benefit the pipe line company which traverses the various districts with its lines. The need for greater cooperation between utility and oil company was stressed, and a program of support to experimentation in centrifugal compressors with a view to their acceptance in the large trunk gas lines. A plea was also voiced to the electrical equipment manufacturers for the development of an economical motor drive which would incorporate the flexibility of variable speed, thus placing electric drives in a better position to power the pumps and compressors used in booster stations.

In the sessions devoted to the study of purchased electrical power in refineries, the capital and operating advantages of purchased electric power were cited by K. K. Kreamer of the Houston Lighting & Power Co., Houston, Tex. The work done in furnishing partial loads to the larger refineries on the Gulf Coast was described in the discussion, and the engineering involved in setting up pilot circuit relays in guaranteeing uninterrupted service to refineries depending on purchased electric power was detailed.

Trends in refining processes and their effect on fuels utilized in refineries were noted, and relative economies in purchased and self-generated power discussed. Advances in safety equipment, including oil immersed auxiliaries and explosion-proof motors were reported, closing the session for the first day.

Petroleum Electric Power Club officers for 1938: H. E. Roberts, Empire District Electric Co., Joplin, Mo., secretary and treasurer; O. W. Jones, Central Power & Light Co., Corpus Christi, Tex., vice president, and C. N. Robinson, Public Service Co. of Oklahoma, Tulsa, president

Dolomite and Shallow Zones Sought at Oklahoma City

By DAL DALRYMPLE

The Oklahoma City field, largely quiescent since limitation of Wilcox sand brought an end to the spectacular drilling campaign in the Capitol Extension zone several months ago, is showing signs of new life with several wells being drilled on both the north and south sides of the big district, seeking production from Dolomite or shallower pay horizons.

The Wilcox sand pinches out at the extreme north side of the Capitol Extension pool, but several operators have gone on to develop good production in the Dolomite zone above the Wilcox. Several fair producers were completed in the shallower horizon along the northwest side of the extension area, and the recent completion of two good Dolomite wells gave added zest to the new exploration. As a result, some new tests have been started and deals for others were reported in the making, with operators following a trend to the northwest toward Britton.

Largest of the recent completions was Gulf Production Co. No. 1 Schuster, west end of Block 2, Kenwood Highland Addition, section 15-12-3w, good for 2,846 bbls. in 24 hours after acidizing, and expected to produce around 300 to 500 bbls. daily on settled production. It had best pay at 6,372 feet, total depth 6,485 feet.

The north Dolomite zone was extended slightly west at about the same time with completion of Clark & Co. No. 1 Lonsway, Block 4, Kenwood Highland Addition, shown on the map as the farthest west producer. It flowed 383 bbls. of oil naturally through tubing in 24 hours, and was considered good for around 300 bbls. daily on settled production. It had best pay in Simpson formation at 6,360 feet, total depth 6,427 feet.

Other tests under way include Stahl Petroleum Co. No. 1 Miller, SE NW SW section 15-12-3w, west of No. 1 Lonsway; Santa Fe Oil Co. No. 1 Slaughter, NE NW SW section 15, north of No. 1 Miller; Gulf Production Co. No. 2 Schuster, NE SW NE SW section 15, east of No. 1 Lonsway; and Clark & Co. No. 1 Pahlow, SW SW NE SW section 15, south of No. 1 Lonsway.

Announcement of additional tests further northwest were expected as soon as drilling deals were completed. Some operators believe Wilcox sand may be picked up again to the northwest toward Britton, but most geologists consider this a remote possibility

Surprisingly good recovery has been had from wells in the extreme north end of the Capitol Extension, in the area covered by the map. Production statistics for some of the wells producing from the Dolomite zone, taken from Corporation Commission records, follow:

Olson-Otstot No. 1 Crawford, farthest north producer, had produced 11,708 bbls. of oil to October 1, and added 7,577 bbls. in October.

Champlin Refining Co. No. 1 Crawford, south of the Olson well, had total recovery of 96,662 bbls. of oil to October 1, and added 9,332 bbls. during that month. Same company's Nos. 1 and 2 Slattery, in Blocks 3 and 6, North View Addition, had total recovery of 59,851 bbls. to October 1, adding 814 bbls. during the month. Its No. 1 Robertson, Block 2, Kenwood Highland Addition, had total recovery of 98,132 bbls., including 755 bbls. in October.

Jones-Shelburne No. 1 McKeever, Block 1, Kenwood Highland Addition, had yielded 81,934 bbls. to October 1, with 5,467 bbls. additional in October.

There is nothing sensational in this new Dolomite activity, compared with Wilcox sand gushers to the south, but operators have learned how to make the smaller producers pay out, with the result leases considered valueless some months ago now are getting a revived play.

The older area in the south part of the Oklahoma City field was sharing in the revival at the Capital, with shallow horizons the goal in tests already started or proposed. The shallow drilling was given impetus recently when Indian Territory Illuminating Oil Co. started No. 4 Fuzzell, SW SW NW section 19-11-2w, and No. 8 Bodine, NE NE SE section 24-11-3w. These wells have as their objective the 3,100-foot Pawhuska series, the twelfth oil-producing zone in the field.

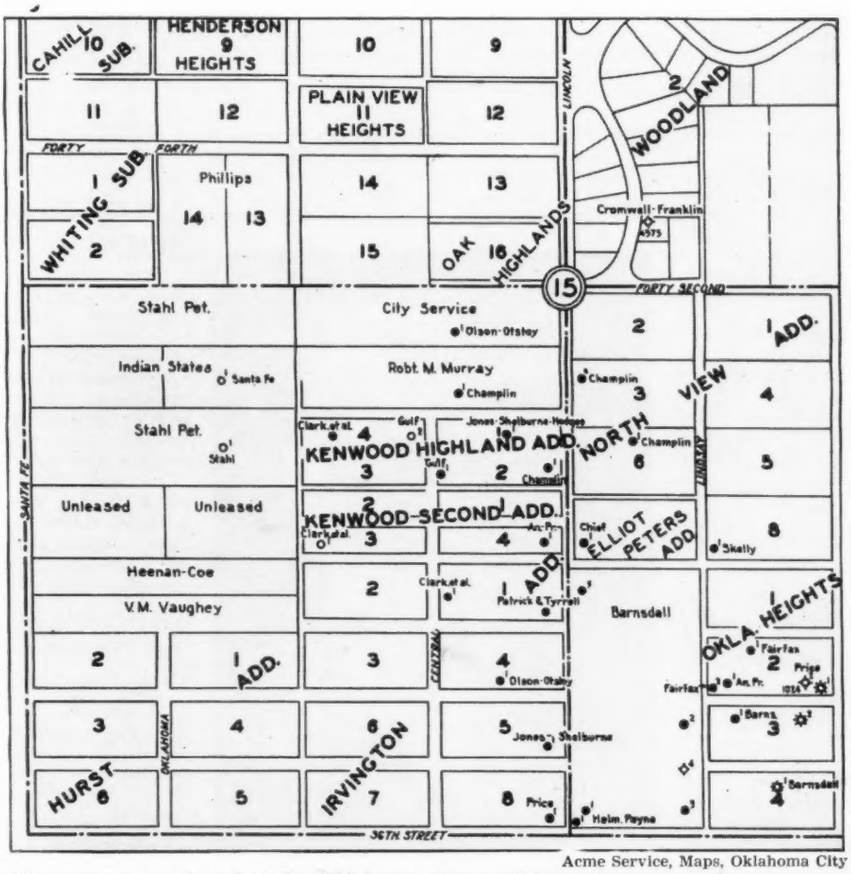
The Pawhuska, not originally considered a producing horizon in the field, gives promise of good production, judging from commission records. Ohio Oil Co. No. 1 Fortson, SW NE section 24-11-3w, an old producer in lower horizons, was plugged back and perforated in the Pawhuska horizon, flowing 8,083 bbls. from that formation in October.

Indian Territory company has a trio of Pawhuska producers on its Fortson lease in SE NE section 24-11-3w, their October yield totaling 15,948 bbls. of oil.

Ohio Oil Co. was preparing to plug back and test the Pawhuska formation in No. 5 Fortson, SE SW NE section 24-11-3w, another old producer in the south field. A gas producer from Prue sand at 6,080 feet for several years, it was to be plugged back to around 3,025 feet, where the company's No. 1 Fortson is producing.

It is expected other old wells which have had a decline in production from deeper horizons will plug back and test the Pawhuska, and it is expected more new wells will be started soon for that formation. It is generally thought new wells drilled from the surface, with casing set on top of the Pawhuska pay, may be even better producers than the plugged-back wells.

The 12 producing zones that assure high recovery and long life for stripper wells in the field are the Arbuckle, Cleveland, Hoover, Layton, Oolitic, Oswego, Pawhuska, Prue, Upper Simpson, Lower Simpson, Tonkawa and Wilcox formations, named alphabetically.



Acme Service, Maps, Oklahoma City

The extreme north end of the Oklahoma City pool is getting a new play as operators seek Dolomite production on a northwest trend

Chemical Exposition Features Products of Oil Industry

NEW YORK, Dec. 11.—Extent to which lines of the chemical and petroleum industries are gradually drawing to a closer parallel was demonstrated at the Sixteenth Exposition of Chemical Industries held in New York's Grand Central Palace this week.

In addition to the analogies existing between the two industries in process equipment, such as filters, regulators, recorders, centrifuges, pumps, special metals and heat exchangers the parallel was also on display in finished products. Many of the chemicals on display are dependent to some extent on derivatives of petroleum while at the same time the modern refining practice is also dependent on chemicals in extraction, treating and inhibiting.

The ramified equipment used in some connection with production or application of chemicals and their products required three floors of Grand Central Palace for exhibition space. Extent and variety of the exhibition was symbolic of the show's slogan, "Chemical Research Creates Industries." The slogan was selected by a committee as the best in a competition conducted to determine a slogan giving a brief descriptive expression encompassing the aims and the benefits redounding to man from the activities of the chemical industries. Norman E. Diehl of E. I. du Pont de Nemours & Co. Inc., was the author of the winning slogan and he was awarded a prize of $250 tendered through Charles F. Roth, manager of the exposition.

Development of methods for the large-scale production and utilization of elemental phosphorus by the Monsanto Chemical Co. won for it the award of the year for achievements in industrial chemistry "which hold great promise for the future of American industry and the American public."

Dr. Martin Hill Ittner, chairman of the committee that selected the winner explained that today, as a result of this development, phosphorus is safely shipped in tankcars from the Tennessee Valley to distant points where it is being used for various purposes. It is one of the elements now used extensively in the petroleum refining industry as a catalyst to hasten reaction of the polymerization process.

There was unmistakable evidence in the exhibits presented that the petroleum refining industry's greater separation and utilization of cracking still gases is opening new and abundant sources of raw material supply to the chemical manufacturers. In this respect the chemical exposition was revealing as a potential source of consumption for the petroleum refining industry's partially or totally wasted fractions—not wasted in a material sense since most are now burned as fuel but perhaps in an economic sense.

Plastics and resins, materials in the manufacture of which the petroleum industry occupies an increasingly important spot, were among the features of the exposition.

The extent to which the petroleum refining industry may participate in manufacture of chemicals is hardly estimable, but there is general agreement that eventually it will become one of the most important sources for raw materials. The significance of this growing relationship is all the more strikingly presented in the fact that some of the largest chemical manufacturers in the business have or are considering location of plants near petroleum refineries where gas fractions from cracking stills unsuitable in preparation of motor fuel may be diverted into the channels of chemical preparation.

Standard of California Issues Statement on Elk Hills Case

SAN FRANCISCO, Calif.—Referring to the decision by Federal Judge Yankwich in the District Court of Fresno, awarding the government possession of producing property in Elk Hills and damage of $6,000,000, Standard Oil Co. of California issued a statement that "This decision, which will be appealed, is another step in a case pending for more than 20 years.

"It concerns a portion of property known as Section 36 in Elk Hills which this company acquired in 1909. In 1919 the property was drilled and oil discovered. Under an act of congress, all of the sixteenth and thirty-sixth sections in California were granted by the federal government to the state for school purposes. To this there was one exception—lands known to be mineral lands at the time they were surveyed by the government. The question was whether at the time of the survey of this particular section 36 is was known mineral land in 1903, prior to its acquisition by this company. The government has contended it was. The company has contended it was not. It was not until 1911 that oil was found within many miles of section 36. The company understands the court has expressed satisfaction of the complete good faith of the company at all times in this case."

Marland Invites President to Send Delegate to Conference

Governor E. W. Marland of Oklahoma says he will send an invitation to President Roosevelt to send a federal representative to the proposed conference of governors on oil prices which Mr. Marland has called for January 24 at Hot Springs, Ark.

Kansas Allowable Hearing Set for December 23

The monthly hearing on Kansas market demand to determine allowable production for January will be held before the Corporation Commission in Wichita at 10 a.m., December 23. On the same date a hearing will be held to determine the market demand for gas for wells in the Otis field of Rush and Barton counties.

W. H. Berg Elected President Of Standard of California

SAN FRANCISCO, Calif., Dec. 13.—At the regular meeting December 9, the board of directors of the Standard Oil Co. of California elected William H. Berg, president of the company, succeeding K. R. Kingsbury, whose death occurred on November 22.

Mr. Berg's career is typical of many Standard Oil executives. He began his services in 1902 at the age of 20, as a stenographer, when he moved to California from Iowa, his native state. During the ensuing 35 years his business activities have been solely with this organization, steadily progressing in various departments until 1908 when he entered the producing department. His ability was recognized in 1921 by his appointment as general manager of the foreign crude oil producing department, which position he held until February, 1924, when he was elected a member of the board of directors. He has served continuously as a director since 1924, and in 1927 was made a vice president. He is widely known throughout the oil industry of California and the nation. He is a director of the American Petroleum Institute.

Boye

W. H. BERG

Navy Department Awards Contracts for Fuel Oil

WASHINGTON, D. C.—The navy department contracted December 9 to pay $3,996,720 for 4,346,150 bbls. of fuel oil. The navy's West Coast requirements for the first six months of 1938.

Contracts for the steam engine oil were: General Petroleum Corp., 1,000,000 bbls., $881,000; Richfield Oil Corp., 2,070,000 bbls., $1,885,460; Shell Oil Co., 500,000 bbls., $433,750; Standard Oil Co. of California, 34,500 bbls., $44,600; Texas Co., 600,000 bbls., $518,400, and Union Oil Co., 300 bbls., $814.

A.P.I. Production Division Spring Meetings Scheduled

The spring meeting of the eastern division, division of production, will be held on Thursday and Friday, April 28 and 29, 1938, in the William Penn Hotel, Pittsburgh, Pa. F. E. Eckert will act as general chairman. The committees appointed to handle the details follow: Program: T. H. Myers, Carnegie Natural Gas Co., Pittsburgh, Pa.; D. T. Ring, Ohio Fuel Gas Co., Columbus, Ohio; George Wittmer, III, Wittmer Oil & Gas Co., Pittsburgh, Pa. Publicity: Fred A. Benkert, Peoples Natural Gas Co., Pittsburgh, Pa. Registration: J. J. Schmidt, East Ohio Gas Co., Cleveland, Ohio. Arrangements: Christy Jayne, Jr., Peoples Natural Gas Co., Pittsburgh.

The spring meeting of the southwestern district, A.P.I. Division of Production, will be held in Fort Worth, Tex., March 24 and 25, 1938, in the Blackstone Hotel, A. G. Levy, district chairman, presiding.

Program committee: W. S. Morris, chairman, East Texas Engineering Association, Kilgore, Tex.; J. K. Hufendick, Texas Co., Wink, Tex.; L. A. Ogden, Pure Oil Co., Fort Worth, Tex.; C. E. Reistle, Jr., Humble Oil & Refining Co., Houston, Tex.; W. E. Schoeneck, Ohio Oil Co., Shreveport, La.; H. M. Staggs, Atlantic Refining Co., Dallas, Tex., and C. G. Staley, Lea County proration office, Hobbs, N. M.

J. D. Collett, President of Mid-Continent Association

The board of directors of the Mid-Continent Oil & Gas Association at their annual meeting in Tulsa Tuesday adopted a resolution opposing any change in the depletion clause of the federal income tax law. Other pending tax matters were discussed at the meeting.

J. D. Collett, independent operator of Fort Worth, Tex., who has been active in the work of the association for several years, was reelected president of the general association. Other officers, all of whom were reelected, are: Vice president for Oklahoma, F. O. Prior, Stanolind Oil & Gas Co., Tulsa; vice president for Texas, W. H. Francis, Magnolia Petroleum Co., Dallas; vice president for Louisiana-Arkansas, D. W. Harris, Arkansas Natural Gas Corp. Shreveport; vice president for Kansas, Ralph Pryor, Pryor and Lockhart, Wichita; vice president for New Mexico, Van S. Welch, Artesia.

A.P.I. Production Division Central Committee Chairman Named

J. T. Hayward, of Barnsdall Oil Co., Tulsa, has been elected chairman of the American Petroleum Institute's Division of Production central committee on drilling and production practices for 1938. W. E. Gilbert, Shell Oil Co., Los Angeles, is vice chairman.

William Bovaird, president of Bovaird Supply Co., Tulsa, announces that on December 15 that company gave each of its employes a bonus of one month's salary.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Running Start

Oil producers, refiners and marketers of petroleum products may have been somewhat envious as they stood on the sidelines for the past three or four years and watched other commodities and manufactured goods showing steady price increases.

But, as they now look forward towards 1938, they see their reward in an assured market for their products without the consumer resistance caused by increased prices which has operated to curtail purchases of many other commodities and manufactured articles.

The problem of falling demand handicapping efforts to move accumulated stocks, experienced in other businesses, does not apply to the oil business or to its customers. Crude oil inventories are not oppressive.

In other lines steady increases in prices from the depression lows have been aided in many instances by a definite policy on the part of the government to bring about higher prices through artificial scarcity. Quotations for commonly used commodities, with the lone exception of gasoline, have climbed steadily since the dark days of 1932-1933.

Just to show what this means, take the comparison of retail prices disclosed by the statistical report of the United States Department of Labor in 51 large cities as given in its latest monthly bulletin.

Sirloin steak costs 48.5 cents a pound contrasted with 34.4 cents in September, 1932. Pork chops cost 41.2 cents against 23.8 cents. (Remember the little pigs.) Butter at 40 cents a pound compares with 26.9 cents and eggs at 40.7 cents a dozen with 29.5 cents a dozen in 1932.

The average retail price of gasoline in 50 representative cities on the contrary is only two-thirds of a cent a gallon more than in 1932, the average retail price, exclusive of taxes being 14.3 cents compared with 13.65 cents a gallon in September, 1932.

The same situation is shown by comparisons in the wholesale markets. The index for all commodities is 87.4; for petroleum products only 62.2. For meats it is 113.4; for house furnishings, 91.1; for coal, 99.2; for building materials, 96.2; and for metal products, 97.1.

There is no doubt as to the significance of these comparisons in considering the outlook for the various industries in 1938. The consumption of many commodities and articles of supply has been curtailed to a degree for the very simple reason that buyers who cannot pay higher prices asked will not use the same quantities.

No such condition exists in regard to gasoline or any other major product of petroleum. They are all below the price index for 1926 and in most instances only slightly above the depression low of 1932.

This, of course, does not mean that the petroleum industry can continue indefinitely to ignore higher costs of everything it buys, the highest wages of any major industry, and the pyramiding of taxation, and still sell its products away below the trend in other industries.

But only such increases will be made which are brought about by these outside costs. The low prices for petroleum products reflect the strides made by the industry in efficient operation in all branches, aided by a substantial increase in volume of demand as a result of attractive prices. Motor fuel is one necessity that has not contributed to the increase in the cost of living.

Continued readiness to supply satisfactory products at prices which the consumer is willing to pay justifies the confidence of the oil industry in another good year in 1938.

For these excellent reasons the oil industry is preparing for an increased output in the coming year which will tax the energies of every branch of the business to supply.

Kansas Nomeclature Committee Announces Changes in Names

Several producing areas recently opened in Kansas were named officially and names of some of the older areas were changed by the Kansas Nomenclature Committee at a meeting in Wichita, December 8. Fifty-four pool names were consolidated into 42 areas.

The Hauschild, Saxman, Theede, Oden, DeWeese and Wherry pools of southern Rice County were consolidated to form the Wherry pool.

Other consolidations and changes were: In Ness County, the Aldrich, Thompson and Beeler pools became the Aldrich pool.

In Russell County, South Atherton changed to Balta; Batt to Trapp; Ehly to Beaver; Palmer-Polzin to North Beaver; Big Creek and associated areas to Big Creek with vertical classifications; North Trapp to Trapp. The newly opened Opdycke area was named North Hall pool, and the Michel pool in section 36-14-14w was changed to South Gurney.

In Rice County, East Chase becomes Cramm pool; Brothers is changed to East Wherry; Witt-Fair to Sterling.

In Ellis County, West Fairport to Blue Hill; Billings to Allon; Froelich to Emmeram; South Victoria to Victoria, in section 18-14-16w; Victoria to Toulon in section 3 and 10-14-17w.

In Barton County, Hoisington to South Ainsworth; South Susank to Ainsworth; Kraft and East Kraft consolidated to Kraft; West Silica to Silica; Ehrlich in section 1-16-14w, to Southwest Trapp; Schrepel to South Silica.

In Sumner County, Herrick to North Vernon; Oxford and Oxford Townsite consolidated to Oxford, with vertical classifications; new McKnab-Blair pool in section 7-30-1e, renamed Zyba; Magnolia-Blair area in section 2-30-4w, to Anness.

In Trego County, Holcomb and Wakeeney combined as Wakeeney; Riga changed to Gugler.

In Stafford County, Hudson to Richardson; St. John and McNaughten combined as St. John.

In Barber County, Medicine and South Medicine Lodge consolidated as Medicine Lodge; North Medicine Lodge renamed Whelan, which was its original name; Gant to Lake City.

In Rush County, South Otis was consolidated with Otis.

In Rooks County, Graham-Fike in section 9-9-17w, to Nyra.

In Sedgwick County, the new National-Fee area in section 36-27-2e, named South Andover; new Steinbuchel-Martin area in section 18-28-1e, named Oatville.

The Habiger area of Rice and Ellsworth counties was changed to Stumps-K.C.

The committee also decreed that hereafter Siliceous lime should be designated as Arbuckle lime, Wilcox sand as Simpson formation, and Lansing-Kansas City pay be referred to as Lans-K.C.

Members of the committee are: L. W. Kesler, Sinclair Prairie Oil Co., chairman; E. C. Moncrief, Derby Oil Co.; James I. Daniels, Pryor & Lockhart, Inc.; L. R. Fortier, Shell Petroleum Corp.; Anthony Folger, Gulf Oil Corp.; Marvin Lee, technical advisor, Corporation Commission; E. G. Dahlgren, director, oil and gas division, Corporation Commission; Lee Cornell, Stanolind Oil & Gas Co., and the oil editors of the Wichita papers.

Lower Marginal Allowance To Be Discussed at Austin

HOUSTON, Tex., Dec. 13.—Proposals that steps be taken to lower the 20-bbl. marginal well allowance in the East Texas field are expected at the proration hearing in Austin December 17 when data obtained during the Sunday shutdowns will be presented. December 12 was the final Sunday shutdown.

Operators generally are of opinion the Sunday shutdowns will not be continued, and as practically all wells are now on a marginal production basis, some new basis of proration will have to be adopted.

Reflecting again the Sunday shutdown, daily average production of the field the past week was slightly above 417,000 bbls. instead of more than 488,000 bbls.

Continental Oil Co. Employes Are Awarded a Bonus

Employes of Continental Oil Co. December 15 shared with stockholders in the company's 1937 earnings, with distribution of a bonus equivalent to almost an extra month's salary, it was announced by President Dan Moran. A 25-cent dividend will be paid to stockholders on December 20.

Atlantic Co. to Purchase More Rodessa Crude Oil

SHREVEPORT, La.—Atlantic Refining Co. has contracted to purchase an additional 100,000 bbls. of Rodessa crude from United Pipe Line Co. during the month of December, it is reported here. United on December 1 started delivery of 232,500 bbls. of crude to this company at the rate of 7,500 bbls. daily.

New Labor Law

HARRISBURG, Pa.—Ralph M. Bashore, secretary of labor and industry, said tonight "an amendment to the general 44-hour law approved today by the industrial board applied to the oil industry."

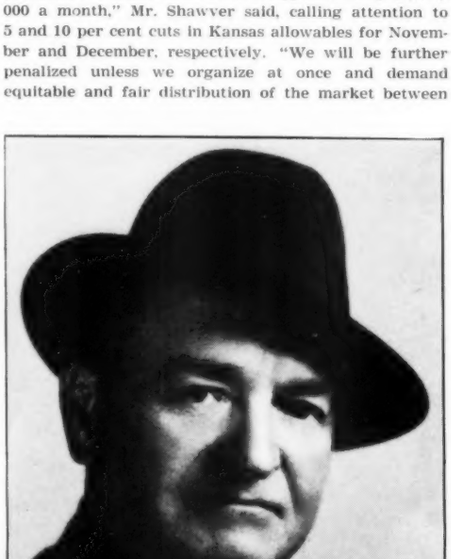
Kansas Oil Producers Plan To Protect State Market

Kansas oil producers will meet in Wichita Friday night, December 17, to form an organization to protect the state's crude oil market, in response to a call by E. B. Shawver, independent operator and president of the Kansas Oil Producers and Landowners Association.

"Diminishing markets for Kansas crude oil are responsible for losses to the state of approximately $1,000,000 a month," Mr. Shawver said, calling attention to 5 and 10 per cent cuts in Kansas allowables for November and December, respectively. "We will be further penalized unless we organize at once and demand equitable and fair distribution of the market between oil producing states. Immediate assertion of our rights is necessary if we are to preserve, maintain and increase our market."

The Kansas independents were expected to discuss tax matters, plan to oppose any additional tax legislation for the oil industry, and to take a definite stand for continuance of the depletion allowance.

The following Kansas oil men were named to assist Mr. Shawver in preparing for the meeting: E. W. Pyle, George W. Hinkle, George Dickey, Joe Aylward, E. C. Moriarty, Earl Wakefield, A. L. Derby, Fred Koch and D. R. Lauck, all of Wichita; Walter Fees, Iola; W. M. McKnab, Winfield; Roy Ramsey, Eldorado; Wilbur Denman, Sedan; Homer Ira, Ellingwood, and A. H. Witt, Russell.



E. B. SHAWVER

THE MARKETS*

CRUDE OIL: *The Caddo Crude Oil Purchasing Corp. posted a reduction of 12 cents in the Lisbon area of Claiborne and Lincoln parishes in northwest Louisiana. The cut is of local significance only, the market generally continuing steady, with statistical position improving.*

REFINERY: *Kerosene and the light heating oils provide the only point in which strength appears among the refined products. Gasoline dropped lower in the Mid-Continent region, and mounting stocks add to the weakened condition of the market. Naturals lost a half-cent in sympathy with the refinery product. Low-grade fuels still dull.*

TANK-WAGON AND POSTED DEALER: *Atlantic Refining Co. reduced dealer tank-wagon quotations on gasoline a half-cent in Philadelphia. Kerosene up at scattered points.*

FINANCIAL: *Oil shares lower in sympathy with the general security market. Average of 30 stocks for week ending December 11: High, 29.11; low, 27.50, close, 28.09. Week ending December 4: High, 29.23; low, 26.99; close, 28.61.*

**Detailed information in market section.*

OBITUARIES

GUY C. RICE, 62, oil producer in the Pennsylvania fields, died December 12 after a short illness in Olean, N. Y.

HORACE H. ATKINS, 64, pioneer Muskogee oil man, died December 10. He was scout and land man in eastern Oklahoma for Prairie Oil & Gas Co. for many years.

ERNEST W. HOCKER, 52, assistant secretary-treasurer of Sinclair Prairie Oil Co., died in Tulsa, December 12, after an illness of 15 months. He had held this post since 1916, previously being in the accounting department of Gypsy Oil Co.

ROBERT McKELVY, vice president and director of Tide Water Associated Oil Co., died in New York, December 9. He had served as a director and officer since 1918 when his father, one of the three founders of the company in 1878, died. Mr. McKelvy was born in Titusville, Pa., August 6, 1875. He was graduated from Princeton in the class of 1898 of which he was president. He entered the oil business and in 1908 became associated with Tide Water.

E. E. SWOPE, vice president and general manager of refineries, Magnolia Petroleum Co., Beaumont, Tex., died unexpectedly December 12 at his country home at Lake Arthur, La. Death was attributed to heart attack. Mr. Swope had been connected with Magnolia Petroleum Co. at its Beaumont refinery nearly 20 years. He entered the service as an engineer. Later he became chief engineer and then assistant to the vice president and general manager of refineries. He assumed the position of vice president and general manager early in 1936 following the death of E. E. Plumly. Mr. Swope was born at Colfax, Pa., December 6, 1885.

Ickes Letter Is Still Barred But Defense Scores Minor Point

By R. B. PYRE

MADISON, Wis., Dec. 14.—The gasoline purchasing plan adopted by defendant oil companies in February, 1935, was not a price-fixing plan, the antitrust trial jury was told today. The plan was proposed by H. T. Ashton, manager of Socony-Vacuum Co.'s lubrite division at St. Louis, was contingent upon passage of the Connally "hot" oil act and provided only for payment of a fair market price to independent refiners, said Robert W. McDowell, vice president in charge of sales, Mid-Continent Petroleum Corp., Tulsa.

It involved no pools, no control buying agency, no allocations, commitments or percentage quotas, all participating companies having been left free to purchase in relation to actual needs, he declared.

It was suggested as a means of helping "wallflower" refiners who were left in the economic ballroom with surplus gasoline on their hands because major companies had tended to favor certain refiners with all their business, he explained.

The plan did not go into effect until March 7, 1935, and by that time tankcar prices already had risen from 3¼ to 3¾ cents a gallon, McDowell added.

The defense Monday failed to get before the jury the famous "Ickes letter" through which it hoped to prove authority for "stabilization" purchases of distress gasoline, but it was permitted to introduce other correspondence tending to show encouragement from Ickes' petroleum administration board.

Three times defense attorney W. J. Donovan offered the Ickes letter, written July 20, 1934, to C. E. Arnott, chairman of the marketing subcommittee of the P and C committee, and three times it was rejected.

Judge Patrick T. Stone agreed with the prosecution, after studying the correspondence over the noon-hour recess, that Ickes' letter limited Arnott's authority to curtailment of "local retail price wars" and did not authorize purchases of gasoline which the defense claimed were necessary to prevent a recurrence of price cutting after it had been checked in December, 1934.

The vital test on the Ickes letter was reached during the testimony of Robert W. McDowell, Tulsa, vice president of Mid-Continent Petroleum Corp. in charge of marketing. The defense presented it as showing McDowell's good faith in relying upon it as a member of the tankcar stabilization subcommittee. McDowell, with O. J. Tuttle, Tulsa, tankcar sales manager of Empire Oil & Refining Co., and Walter P. Jacobi, Tulsa, field representative of Wadhams Oil Co., were members of this committee which, Jacobi had testified as a government witness, met periodically from March through May, 1935, to "recommend" a fair price for purchase of surplus gasoline by major companies from Mid-Continent independent refiners. The prosecution charges these "recommended" prices caused the 2-cent rise in the tankcar price during those months.

McDowell testified he spent 40 to 50 per cent of his time from 1933 to 1935 in code activities, and was permitted to state the objectives of the code in stabilizing prices, fair marketing practices, production control in the interest of conservation, together with higher wages and shorter working hours.

He was familiar, he said, with the condition of the small refiner, and when the government objected to his description the court allowed him to describe that condition.

"This defendant, as a witness, is in an entirely different position than that of the ordinary witness," Stone ruled.

The independent was in a bad way financially, with the price of crude posted at $1, McDowell explained, and with the influx of "hot" oil on the market. Price wars, starting in July or August, 1934, aggravated the condition and the independents started losing customers as well as their money.

Stabilization meetings were called after the Ickes letter was sent to Arnott, he started to explain and the battle started when the government charged that the meetings went outside the scope of the letter and could not legally authorize any buying program.

"We've come again to the parting of the ways," said J. H. Lewin. "This entire case centers upon whether or not the Sherman act was suspended. If they had a defense they could establish it in one sentence."

McDowell was permitted to testify, however, that he went to these meetings because he was called upon by Arnott, and because the defense explained they led up to the St. Louis meeting of March 5, 1935, where the "conspiracy" allegedly was hatched. He named 39 men who attended a meeting in Chicago, January 4, of whom only 16 were indicted, and the tankcar stabilization committee was appointed at that meeting.

Arnott complimented the group on its cooperation in checking local price wars in December, but

Caustic Criticism

When laws must be written in general terms, of uncertain application in specific cases, which is the difficulty with most business regulation, then a citizen certainly should be entitled to an administrative ruling on the legality of his conduct before he should be treated as a criminal.

Civil remedies can be provided to compensate for private injury, or to establish the validity of an administrative rule. But the threat and employment of criminal prosecution, against men who are willing and anxious to obey the law but compelled to guess at what is the law, do not make sense as a governmental method of encouraging and promoting the business of the country upon which employment, wages, taxes and the daily comfort and prosperity of all depend.

Donald R. Richberg, former chairman of the NRA in an article written for the New York Times, Sunday, December 5, 1937.

R. W. McDOWELL

R. O. AUDRAIN

said he and others felt all the work would be nullified unless the influx of cheap gasoline was halted, the witness testified. Washington was being deluged with complaints from independent refiners, and Arnott felt unless something could be done about restoring a parity price, crude oil would have to be cut below the $1 posted price.

Bernard L. Majewski of Deep Rock Oil Co., also made a speech, McDowell testified, declaring he and I. A. O'Shaughnessy between them represented 20 to 25 independents on the P and C committee, who, unless something was done, would be forced either to close down and discharge their employes or withdraw from the code. Both are defendants. McDowell said he was named chairman of a committee appointed to study the situation.

"I tried to stay off the committee, as I had too many other things to do," he declared, "but others present prevailed upon me to accept."

As evidence that he acted in good faith, McDowell explained he had seen a copy of the Ickes letter, to which was attached a memorandum from Louis Titus, legal counsel for the P and C committee, and that he relied upon that letter.

Ickes' Letter

Ickes' letter said, in part:

"My dear Mr. Arnott:

"It has been brought to my attention that the market for gasoline and other petroleum products has recently been disturbed by numerous price wars in many different localities and states. This has resulted in causing petroleum products to be sold below cost in some areas in order to meet unrestrained competition, and has in turn depressed the wholesale market for such products, thereby leading to the building up of surplus and to the economic and physical waste consequent thereon. . . . . It would appear, therefore, that we are faced with conditions which would, if uncontrolled, tend to frustrate the purposes of the National Industrial Recovery Act. . . . . I am therefore requesting you, as chairman of the marketing committee of the Planning and Coordination Committee, to take action which we deem necessary to restore markets to their normal condition in areas where wasteful competition has caused them to become depressed. . . . . I am requesting and authorizing you . . . . to designate committees for each locality when and as price wars develop, with authority to confer and negotiate and to hold due public hearings with a view to ascertaining the elements of conflict that are present, and in a cooperative manner to stabilize the price level to conform to that normally prevailing on contiguous areas where marketing conditions are similar . . . . Any activities of your committee must, of course, be consistent with the requirements of . . . the act."

He was shown the letter, McDowell said, by the late P. M. Miskell, vice president of Empire Refining Co.

The jury retired during argument over its introduction.

"If Mr. Ickes sent me a letter like this I think I'd be inclined to act upon it," the court observed.

And further indicating an inclination, at the moment, to permit introduction of the letter, Judge Stone pointed out that McDowell, as a defendant, had relied upon it, and said, "I'd want the right to have it read to the jury if I were in his position."

The Titus memorandum was read to the court. H. E. Chaffetz objected that Titus was only Arnott's personal attorney, but Amos L. Beaty, defense attorney and former member of the P and C Committee, said the committee engaged him as counsel and paid him a salary.

The memo pointed to a clause in the recovery act which said the president might approve codes when he found they were designed to promote monopolies, eliminate or oppress small enterprises, and continued, in part:

"It is clear that no committee appointed by you would even consider an agreement which would have any of the objectional features provided in this section. On the contrary, the duty of the committee is to restore prices to a normal level. Restoring prices to a normal level must necessarily have a tendency to check monopolies rather than to promote or permit monopolies.

"My conclusion is that this letter from the petroleum administrator is for all practices a complete protection to you and your committee to engage in all reasonable activities to restore prices to normal levels.

"I further conclude that the agent of the president having solicited the taking of action to stabilize prices, that it is unthinkable that there could ever be any prosecution or criticism by the government for doing the very thing which the president's agent had asked you to do."

The government objected that if the letter were received, it would unnecessarily delay the case by forcing the prosecution to introduce subsequent letters by Ickes inquiring of Arnott as to whether he had complied with the law, to show that the defendants did "other things" not authorized by law, and to present its proof in support of a second indictment charging the defendants with combining to restrict jobber margin.

"If we have to stay here one or two months longer to try this case, we'll stay," the court replied. "Justice must prevail even though the heavens fall."

When court reconvened in the afternoon, argument continued in the jury's presence.

"Tell us more about these price wars, which you say were over in December," Judge Stone directed McDowell. "What did you do?"

McDowell explained the price wars spread like "prairie fires," and when attempts were made to handle them locally they only broke out in other places. They reached their peak in October and November, 1934, but early in December a general stabilization meeting was called, lasting all week, and was attended by thousands of representatives from the entire industry. This attempt to "eliminate all local fires at one time" was effective as evidenced by a great improvement in the retail price structure, he added.

McDowell said he had read a copy of the Ickes letter after seeing it published in the trade press, and added that Majewski read the letter and memorandum at a September meeting of the stabilization committee. Donovan thereupon offered it formally in evidence, but hopes of the defense were dashed when the court remarked:

"It hardly seems to me that this letter goes beyond price wars."

"It goes far beyond that," Donovan protested. "When you have a forest fire to contend with you have to deal with the whole forest, not a group of trees."

Chaffetz asked the court to rule that "no reasonable man would consider that letter as authorizing anything other than the curtailment of price wars," and Judge Stone declared:

"There is nothing ambiguous about this letter. It is clear that its authority is limited to retail price wars. The objection of the government is sustained."

Twice more Donovan offered the letter, after McDowell had testified price wars were not eliminated entirely in December, and after counsel had asked him if he had advanced any idea as to how a recurrence could be prevented, but each time the offer was rejected.

The defense fared better in presenting correspondence between Mr. O'Shaughnessy, president of Globe Oil Co., and Charles Fahy, chairman of the Petroleum Administration Board.

It was offered in connection with a meeting held February 5, 1935, at the Chicago office of E. J. Bullock, vice president of Standard Oil Co. (Indiana), called by Mr. Arnott as the result of a new influx of "hot" oil on the market in East Texas after the Supreme Court's decision invalidating the original "hot" oil section of the code.

McDowell testified the market was worse than in January and Arnott had asked him to get the tankcar committee together. A. V. Bourque, secretary of Western Petroleum Refiners Association, attended, reporting independent refiners in the Mid-Continent would have 600 to 700 tankcars of distress gasoline on hand that month. This supply was scattered among 16 or 17 independents and it was suggested the 10 or 12 majors buying regularly in that field be asked to purchase it, McDowell said. "The suggestion," he added, "provoked quite an argument."

Edward Karstedt, former vice president of Continental Oil, and Mr. Bullock did not think major buying would be of any value, because with "hot" gasoline flowing out of East Texas it would be "like mopping up the ocean." They wouldn't have anything to do with any more buying programs, McDowell continued, declaring they had consented to participate in programs under the code in 1934 which "didn't do any good."

They wanted nothing to do, he added, with allocations, commitments or anything which would permit anybody to tell them how much they would have to buy, expressing the opinion such procedure was the reason for failure of the 1934 programs.

Karstedt and Bullock said in their opinion the only solution would be a cut in the price of crude oil.

"I didn't agree with their pessimistic attitude," McDowell declared. He told the committee the situation was bad, but they should be encouraged over the administration's attempts to get the Connally "hot" oil act passed, and that "we were a committee appointed by a representative industry and should try to do something."

Code Cited

"I referred," he said, "to the fact that under the code there was a section covering parity between the price of gasoline and crude."

Then O'Shaughnessy spoke up, declaring he "felt I was right and that the committee should attempt to do something." And showing how earnestly O'Shaughnessy felt, McDowell said, he read the correspondence with Fahy.

The government objected to its introduction, declaring it was merely "another indirect way of getting hearsay into the record," but the objection was overruled.

O'Shaughnessy's telegram to Fahy a week earlier said a good job of stabilizing markets had been done in Standard of Indiana territory, but the improvement could not continue "unless we get the tankcar price of gasoline up to parity with crude." He had urged the necessity of getting the price up "before it was too late," informing Fahy if something wasn't done he understood there would be an organized movement to get tankcar prices down still farther, which would mean chaos.

Fahy's reply assured O'Shaughnessy reports were awaited on proposed remedies and that there was "no disagreement between us as to the tankcar question."

The number of defendants was reduced to 37 individuals and 16 corporations when Judge Stone granted a motion for dismissal of R. O. Audrain, Tulsa, buyer for Tide Water Oil Co. Motions for directed verdicts on behalf of all remaining individuals were denied, the court, however, announcing "the defendants may, if necessary, by proper motions after verdict, seek the same objectives that they have sought in their motions for a directed verdict, but in the present state of the record the court is of the opinion that the government is entitled to have the issues in this case submitted to the jury."

Outstanding in the week's sessions was the

court's refusal to accept testimony designed to show that President Roosevelt, early in 1933, indicated willingness to approve a $1 minimum price for crude oil and looked favorably upon an advance in gasoline prices in view of curtailed wages and employment in the industry, and a defense attack upon the government's computations attempting to show that the companies purchased surplus from independents higher than the published market.

The defense also produced two Texans to establish that the East Texas Refiners' Marketing Association was the central factor in a "selling" movement and was not instigated by the major companies in a "buying movement."

James A. Moffett, chairman of the board of the California-Texas Oil Co., former government representative on the Planning and Coordination Committee, came from New York to tell of conferences with President Roosevelt about crude oil prices, but his testimony was barred as immaterial.

Mr. Moffett was permitted to state he attended conferences at the White House on March 8, 1933, and September 26, 1933, but the government's objection to what was said at the conferences was sustained and the jury was excused while Defense Attorney Donovan read his offers of proof into the record.

If allowed to testify, counsel said, Mr. Moffett would tell of his conversation with the president relating to overproduction, "hot" oil, and other factors which had caused depressed employment and wage conditions, followed by discussions of remedies, including a proposed national program of production control by a system of daily allowables. The president, Mr. Moffett would have stated, compared the oil situation to the wheat situation and stated belief there should be a $1 minimum price for crude oil and that he would not consider a 2-cent advance in the price of gasoline excessive.

Ickes also said, at the White House conference September 26, Moffett would have testified, that he felt the president was the one to decide whether a minimum price should be established and the president then indicated willingness to approve a minimum price, leaving preparation of schedules to Ickes.

The matters discussed at both conferences were "general knowledge" to the industry at the time, Colonel Donovan declared.

The court, however, sustained the objection to these offers and likewise to proposed testimony of talks with the defendant, C. E. Arnott, regarding his appointments by Ickes to "do something" about the gasoline price wars in the middlewest, and testimony of another White House conference, October 7, 1933, on proposed price schedules. In ruling out the testimony, Judge Stone explained the record already showed that a $1 crude oil price prevailed when the conspiracy was alleged to have started.

The origin of the East Texas Refiners Association was described by Judge F. W. Fischer, Tyler, Tex., and Marion Travis, refiner of Houston, Tex. Judge Fisher, who represented a majority group of East Texas independent refiners in a successful contest against "9-C," the original "hot" oil section of the national recovery act, before the United States Supreme Court in January, 1935, testified the association was formed on his advice.

While that case was pending, he testified, he realized the proration law enacted by the Texas legislature in December, 1934, was valid, and knew his refiner clients no longer could operate on "excess" oil.

"I held a meeting with the refiners and told them they must do business on legally produced oil—that they'd have to obey the law—so they got busy," Judge Fischer said. He had in mind a central marketing agency "something like those coal operators organized up in Pennsylvania." He was in the midst of explaining that this organization was held legal by the Supreme Court when Judge Stone halted him. The defense contends the buying activities of the defendants were valid under the Appalachian coal case.

F. W. Fischer of East Texas and W. P. Z. German of Tulsa after the Texan testified

Fischer said he never met Neil Buckley until the latter came into his office and informed him he planned to call on major companies in behalf of the association to see if they would buy some of its gasoline. Buckley wanted to know first, however, if the members were "in good faith," because if they were not, he didn't want to sell their gasoline to "his friends."

"I told him they were in good faith because they were obliged to be in good faith," Fischer testified.

"Wouldn't Buckley know that without asking you?" the court inquired.

"I don't know whether he did or not," the Texan replied.

Travis, as an official of Southport Petroleum Co., said he was one of the association's organizers, and that it was formed before Buckley arrived in East Texas from Tulsa. It was he, Travis testified, who proposed Buckley be asked to help the association find customers among major companies.

"Did any representative of any major company suggest to you the employment of Neil Buckley?" asked Colonel Donovan.

"No major company ever discussed Buckley with me in any connection," Travis replied, explaining Buckley's aid was sought because all the refiners knew him, and knew he was a "square shooter."

"Did any of the defendant companies have anything to do with the formation of the East Texas association?"

"Absolutely nothing whatever."

Travis also declared, when asked whether Mr. Arnott ever urged him to curtail production, that "he certainly did not." He never saw Mr. Arnott until he came to Madison. Nor did Robert Cline, secretary of the association, ask him to curtail production, and he denied he attended any meeting in 1935 at which "Buckley urged him to curtail production."

He declared he knew nothing of an alleged "buying program" by major companies in the Mid-Continent as a possible inspiration for formation of the East Texas association, and didn't think any member of his association knew of any plan to "take surplus gasoline" in the Mid-Continent.

The East Texas refiners had sold gasoline to major companies before, he testified.

"Then why did you form an organization if you had no trouble selling to majors?" inquired Judge Stone.

It was a question, Travis replied, of "marketing our gasoline where we could get cost of production."

Judge Fischer told some of the story of "hot" oil which demoralized the market. He owns 39 wells himself, each of which, on the basis of Texas Railroad Commission estimates, is capable of producing a little more than 800 bbls. an hour, "if turned loose," but he is restricted to 20 bbls. a day from each well. He estimated there are now some 25,000 wells in the field, and "there never was a dry hole drilled inside the area."

While the East Texas field was "allowed" to produce 400,000 bbls. a day, that wasn't necessarily the amount produced, Judge Fischer explained, and just how much was produced nobody knows, "but as the representative of the folks who produced the excess I guess I know as near as anybody," he said. He placed the excess at 150,000 to 200,000 bbls. daily.

"I don't mean to say that my clients went out deliberately to violate the law," he explained. "They were running under the protection of court injunctions."

Up to the time the Texas legislature acted in December, 1934, there was no statute authorizing the railroad commission to fix production quotas, Judge Fischer said, and even when the proration law was passed a federal judge held it did not apply to interstate shipments and that the state had no jurisdiction over a man's production on his own property. But he foresaw the law would be held valid, and knew if his clients did not do something quickly they would be left without a market.

L. S. Wescoat, Chicago, vice president and secretary of Pure Oil Co., who had testified as a government witness, was recalled by the defense to show that his company, during the alleged conspiracy years, was compelled to purchase large quantities of gasoline because it could not produce sufficiently to meet its requirements. Purchases from independents in East Texas and the Mid-Continent were only a small percentage of Pure Oil's total, and the company never bought at prices above the low of the published market, he said.

Natural Gasoline

East Texas to Start Operation Of New Rodessa Field Plant

SHREVEPORT, La.—East Texas Refining Co.'s new $250,000 natural gasoline plant in the Miller County, Arkansas, extension area of the Rodessa field is expected to be placed in operation this week. The plant, first to be built in this area, has a daily gas capacity of 10,000 feet and will produce about 45,000 gallons of natural daily at full capacity. Location of the plant is in section 14-20-38 on the A. A. Capps lease, just north of the Arkansas-Louisiana line.

New Marion County, Texas, Plant Starts Operation

SHREVEPORT, La. — Partial operation has begun in the new 25,000,000-foot gasoline plant recently completed in the Jefferson area of the Rodessa field, Marion County, Texas, by the Arkansas Louisiana Gas Co. of Shreveport, La. Full operation is expected to be undertaken by the first of the year. The new plant, of the absorption type, will have a daily output of approximately 15,000 gallons of finished stabilized product.

New Reid Vapor Pressure Method Becomes Effective January 1

A revised method for the determination of Reid vapor pressure of natural gasoline is to become effective as a standard of the Natural Gasoline Association of America January 1, 1938. Officially known as A.S.T.M. Method D 323-37T, the method was originally developed by the N.G.A.A. in cooperation with the California Natural Gasoline Association and was adopted as a standard for the industry during the past year by the American Society for Testing Materials.

The "scope" of the new method indicates that it is to be used in the determination of vapor pressures of volatile, nonviscous petroleum products and describes two different sampling procedures. One of these is for products having vapor pressures of 26 pounds, or less, and the other for products of higher vapor pressures. In those marginal cases in the vicinity of 26 pounds, where there may be a doubt as to which procedure would apply, it is stated that the determining factor should be the maximum vapor pressure specification of the product to be tested without regard to the numerical value obtained by the test.

Obviously the new method is a combination of A. S.T.M. Method D 417-35T, adopted as the standard for motor and aviation gasoline vapor pressure determinations in 1935, and A.S.T.M. Method D 323-32T which has been the standard method for testing natural gasoline since 1932. Both of these methods were developed by the N.G.A.A. also. Such a combination gives both the refiner and the natural gasoline manufacturer the same standard for making Reid determinations, thus simplifying the operations of buyer and seller, particularly in the volume transactions for grades of natural gasoline of 26 pounds vapor pressure or less.

Study of the new method reveals that old A.S.T.M. D 417-35T has been used in practically the same form except for minor revisions in procedure and the inclusion in its scope of natural gasoline having a vapor pressure up to and including 26 pounds. The old procedure for natural gasoline, A.S.T.M. D 323-32T was considerably revised to make it more nearly conform with that of D 417-35T, though the air saturation step and intermediate sampling procedure were eliminated. With these corrections made in the old methods, it was a simple step to combine the two into a single standard with the first part covering the lower vapor pressure grades and the second covering grades above 26 pounds vapor pressure. The result is a method which is calculated to yield more uniform and duplicable results on all products wherever they may be run. However, attention is called to the fact that reasonable care must be exercised and that the precautions and specifications of the method must be carefully followed.

The N.G.A.A. Technical Committee devoted much of its time for nearly a year in perfecting the method before recommending its adoption as a standard for the industry to the A.S.T.M. Extensive tests, both laboratory and field, were made for the purpose of studying the results obtained by the old and new methods. A total of 814 tankcars of natural gasoline were tested, many of these being sampled at both point of origin and at destination, in order to obtain the necessary data to make the desired comparisons. Results of these series of tests indicated that D 323-37T gave fractionally higher numerical values in the lower vapor pressure grades thus working a slight economic hardship on the natural gasoline manufacturer. However, the N.G.A.A. did not feel that this handicap was sufficient justification for insisting there be two methods of test covering products in the same general field and made the concession in the interests of uniformity and to provide the refiner with a more convenient and accurate method than the old D 323-32T.

Copies of A.S.T.M. Method D 323-37T can be obtained from the offices of that organization, 260 South Broad Street, Philadelphia, Pa., at the following rates: One to nine copies, 25 cents each; 10 to 24 copies, 20 cents each; 25 to 99 copies, 17½ cents each, and larger lots on quotation.

Grimes Building New Plant in Sherman Field of Michigan

MOUNT PLEASANT, Mich. — Construction of a third natural gasoline plant in Michigan is now under way by Otha H. Grimes in the Sherman field. The plant, which will be of the compression-absorption

Refinery Expansion

These men were in charge of construction of Barnsdall Refining Co.'s new 5,500-bbl. refinery at Corpus Christi, Tex.: Roy E. Davis, Mattison Wallack & Co.; J. M. McMullen, Barnsdall Refining Co.; C. R. Black, Frick-Reid Supply Corp.; and O. N. Miller, Universal Oil Products Co. Gordon T. Granger, formerly superintendent of the company's Okmulgee, Okla., refinery, is superintendent of the new plant. Trial runs were started at the plant this week and upon their completion the plant will be placed in operation.

New Lake Charles Refinery Now Under Construction

HOUSTON, Tex.—Southwestern Oil & Refining Co., Inc., a newly formed Louisiana corporation, has started construction of a new 5,000-bbl. refinery at Lake Charles, La., and plans to have the plant in operation by the latter part of April, 1938. The plant is being erected on the deep-water ship channel at Lake Charles and will operate on local crude. Cost of construction is estimated at $500,000.

President of the new company is Harry E. Clark, formerly vice president of Southwestern Oil & Refining Co., which operates a 3,000-bbl. plant at Corpus Christi. The latter company is headed by S. S. Seltzer of New York City.

Indiana Company to Distribute Quaker State Products

CHICAGO.—Arrangements have been completed between Standard Oil Co. of Indiana and Quaker State Oil Refining Corp. under which the Quaker State oils and greases will be distributed by Standard in addition to the regular line of Standard products. The arrangement will be effective throughout the territory in which the Indiana company is operating and to some extent in the territory of subsidiaries. Retail distribution of the Pennsylvania lubricants through the Standard Oil dealers will begin February 18, 1938. The Mid-Continent base oils and greases which have been the regular line at Standard dealers' stations will continue to be handled as before.

When the Standard company takes over the Quaker State products, Barnsdall Refining Co. which has been distributing the line will discontinue such distribution and will promote its own line of greases and motor oils.

Petroleum Safety Marshals Hold Semiannual Meeting

OIL CITY, Pa.—Fifty Pennsylvania refinery representatives attended the semiannual meeting of the Fire and Safety Marshals of the National Petroleum Association here recently. Snowbound highways cut the attendance below one-half of what was expected.

Speakers included C. L. Suhr, president, National Petroleum Association; B. T. Perry, Socony-Vacuum Oil Co., Franklin; D. E. Bechtol, safety director, Quaker State Oil Refining Corp., Emlenton; Morton Irvine, safety director, United Refining Co., Warren; J. M. Hinman, assistant superintendent, the Pennzoil Co., Oil City; F. A. Scharman, department head, Conewango Refining Co., Warren; and Walter G. Eaton, Superior Oil Works, Warren. Roy Gettings of Conewango Refining Co., Warren, presided at roundtable discussions. The Bradford-Warren group, with a total of 137 points, won the competitive inspection at Pennzoil's plant No. 1.

type, and having a daily gas capacity of 2,500,000 cubic feet, is expected to be completed within the next 30 days. The company's other two plants in Michigan are located in the Yost and Greendale fields.

Residue gas from the plant is to be marketed to the Gas Corp. of Michigan, being transported through a new 15-mile line recently laid by the company into Mount Pleasant. R. F. Chisolm, superintendent of Grimes' Michigan plant, is in charge of the new project.

Natural Gasoline Production Slightly Higher in October

Production of natural gasoline increased slightly in October, according to the monthly report prepared by the Bureau of Mines. The daily average production in October was 5,986,000 gallons, which was only 5,000 gallons more than in September but 797,000 gallons (13 per cent) greater than the average of October, 1936. The most notable increases in production were in the Appalachian and Panhandle fields. Total production in the East Texas field, now the second largest producing field in the United States, declined from 17,898,000 gallons in September to 17,338,000 gallons in October.

Production of the various areas during the month, in gallons, was as follows: Appalachian, 6,556,000; Illinois, Michigan, Kentucky, 1,253,000; Oklahoma, 45,128,000; Kansas, 4,723,000; Texas, 57,736,000; Louisiana, 9,437,000; Arkansas, 923,000; Rocky Mountain, 7,090,000; and California 52,627,000. Total production for the first 10 months of 1937 was 1,681,176,000 gallons as compared with 1,438,920,000 gallons in the like period of 1936.

Material withdrawals from stocks continued at both refineries and plants and terminals in response to the seasonal trend in blending. Total stocks on October 31 were 228,648,000 gallons, compared with 263,676,000 gallons on hand the first of the month and 184,128,000 gallons a year ago.

Shipments to jobbers and retailers and exports in October totaled 32,508,000 gallons, or 4,998,000 gallons more than in September, 1937. The major portion of the increase was in exports which increased from 14,070,000 gallons to 20,748,000 gallons, or 47 per cent. Vapor pressures continued their seasonal increases, the average of all major movements except that to jobbers and retailers increasing. The weighted average vapor pressure of all shipments in October was 20.5 pounds compared to 19.2 pounds in September.

Natural Gas

Operations in New York-Pennsylvania Fields

COUDERSPORT, Pa., Dec. 13.—Two wells were completed, one location abandoned and another Woodhull field well reached the Oriskany sand in the New York-Pennsylvania deep sand fields. Producers Power & Light Co. completed its test on the G. M. Whitman farm in Harrison Township, Potter County, with an initial open flow of 14,000,000 feet. It topped the Oriskany sand at 5,056 feet and was completed at 5,067 feet. Initial rock pressure was 1,270 pounds.

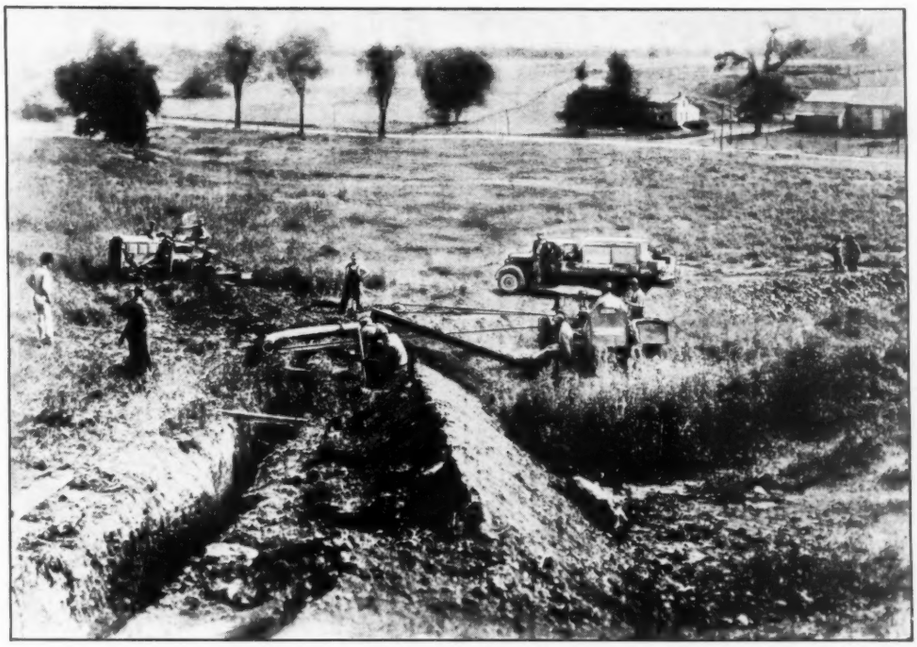
Another Warren County Oriskany test failed when Belmont Quadrangle Drilling Co. abandoned its test on Lot 487, Pleasant Township, at 4,370 feet. It found only a show of salt water in the 17 feet of Oriskany sand at 4,294-4,311 feet.

Godfrey L. Cabot, Inc. abandoned a location on the Orwin & Carlson farm, Wharton Township, Potter County, southeast of production.

Rio Grande Valley Gas Co. Is Granted an Injunction

BROWNSVILLE, Tex.—Federal Judge W. H. Atwell, Dallas, said he would grant a temporary injunction asked by Rio Grande Valley Gas Co., restraining Hidalgo Gas Co. from furnishing natural gas to two McAllen canning plants. The court set January 6, 1938, for final hearing.

Pipe Line Activity



Making a side bend

Michigan Cooperative Plans Seven-Mile Gas Pipe Line

SAGINAW, Mich.—McBride, Mich., villagers and nearby farmers to the number of 55 have organized a public utility company, a cooperative venture, to get for their homes and business places a supply of natural gas from a nearby gas well at a cost of 15 cents per 1,000 feet, including cost of a 7-mile 2-inch pipe line and house connections.

Officers of the company, known as the McBride Cooperative Gas Association, have contracted for the gas output of a well on the Harry Hanson farm in Day Township, Montcalm County, and have taken an option on the adjacent Waite Stevens well as a standby reserve. The pipe line trench will be dug and the pipe laid by the members of the association.

The neighboring towns of Edmore and Stanton have asked to share in McBride's gas supply, but the Public Utilities Commission has refused a permit. Officers and directors of the cooperative are: President, Earl DeSpelder; vice president, D. W. Dean; secretary-treasurer, Kenyon Crum; directors, Harry Camp, Glenn Lamereaux.

Union Oil to Lay Salt Water Line in Santa Maria Area

LOS ANGELES, Calif.—Union Oil Co. is spending approximately $200,000 to protect farmers in the Santa Maria Valley field from a menace that does not yet exist. The company is completing construction of a salt water pipe line to tidewater at the mouth of the Santa Maria River from the Union's tank farm and pumping plant on the Battles ranch, southeast of Santa Maria in the heart of the oil field which the company discovered a little over a year ago. Construction of the line was undertaken at this time to guard against future impregnation of the top soil and fresh water area of the valley with salt water. The length of the pipe line will be about 14.5 miles. Approximately 16,635 feet will be of 12-inch pipe, 41,680 feet of 15-inch, and 26,070 feet of 16-inch. The pipe will be of unglazed clay and capacity of the line will be approximately 50,000 bbls. of water per day. Contract has been awarded to Macco-Robertson Construction Co. of Los Angeles. Fritz Karge, Union Oil Co.'s transportation engineer, who designed the pipe line, is supervising construction and approximately three months will be required for completion. It is contemplated, when this pipe line is finished, another will be constructed from the Orcutt pump station to connect with the Santa Maria Valley salt water line and extend this protection to agricultural interests in that area. To collect waters from the Santa Maria Valley and Orcutt fields, about 30 miles of gathering lines also will be built.

Line from Goldsmith to Harper-Foster Pools

FORT WORTH, Tex.—Ector Gas Line Co., Inc., is surveying right of way for the immediate laying of a high-pressure gas line from the Goldsmith pool in Ector County to the Harper and Foster pools. The project will include 11 miles of 6-inch running south from Goldsmith, with 3 miles of 4-inch to Harper and 10 miles of 4-inch to the Foster field. Gas will be obtained in residue form from the Phillips-Landreth gasoline plant at Goldsmith, now nearing completion.

Welding Contract Awarded on Shell Indiana-Ohio Line

H. C. Price Co., of Bartlesville, Okla., welding contractor, announces it has been awarded the contract by Ostrom Realty & Construction Co. for electric welding of approximately 160 miles of 8-inch line for Shell Petroleum Corp. from the Illinois-Indiana line to the Indiana-Ohio line.

Shell Pipe Line Co. of St. Louis has almost completed constructing and welding the line across the state of Illinois from St. Louis through Effingham. The line extends northeast towards the Great Lakes and the Price contract will pick up the line around Terre Haute, Ind., and weld it to the Ohio line in Jay County, Indiana.

Shell Refinery Strike

HOUSTON, Tex.—Conferences between Shell Oil Corp. officials and representatives of the oil workers union (C.I.O.) ended here Friday after failing in efforts to settle the shutdown strike at the company's 76,000-bbl. Deer Park refinery.

The company proposed that the plant be reopened and negotiations for a new contract between the company and the union be started January 5.

Crude Oil and Refined Summary for First Ten Months of 1936-1937

The daily average production of crude petroleum in October, 1937, was 3,577,800 bbls., according to the Bureau of Mines. This was nearly 90,000 bbls. below the average of September but 16 per cent above the average of October, 1936.

Crude runs to stills moved in unison with production, the daily average declining from 3,450,000 bbls. in September to 3,388,000 bbls. in October. The trend in crude stocks continued much the same, the reduction for the month being 1,270,000 bbls., compared with 1,181,000 bbls. in October.

The indicated domestic demand for motor fuel in October was 45,361,000 bbls., or 2.5 per cent higher than a year ago. Exports were 3,830,000 bbls., up 54 per cent, and total demand was 49,191,000 bbls., up 5 per cent. Stocks of gasoline, which are generally reduced in October, rose 2,657,000 bbls. to a total of 68,037,000 bbls. on October 31.

According to data of the Bureau of Labor Statistics, the price index for petroleum products declined in October after showing gains in every month since March. The October index was 61.7, compared with 62.2 for September, 1937, and 57.9 for October, 1936.

United States Supply and Demand—Crude Oil (Bbls.)

Ten months—	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Indicated domestic demand‡	Exports	Stocks refinable crude Oct. 31
1937	1,089,535,000	1,069,247,000	*20,288,000	*1 9	1,066,868,000	22,667,000	1,013,722,000	55,525,000	308,472,000
Daily average	3,584,000	3,517,260	67,000		3,509,000	74,562	3,331,158	182,648	
1936	936,803,000	959,387,000	22,584,000	2 4	909,846,000	26,957,000	917,014,000	42,373,000	292,271,000
Daily average	3,082,000	3,155,878	73,878		2,993,000	88,674	3,016,493	139,384	
Increase, 1937	152,732,000	109,800,000			157,022,000	†4,290,000	96,708,000	13,152,000	16,201,000
	16 3%	11 4%			17 3%	†15 9%	10 5%	31 1%	5 5%

Supply and Demand—Refinery Products—Motor Fuels (Bbls.)

Ten months—	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Domestic demand	Exports	Stocks Oct. 31§
1937	475,170,000	468,905,000	*6,265,000	*1 3	475,170,000		436,637,000	32,268,000	73,481,000
Daily average	1,563,000	1,542,000			1,563,000		1,436,000	106,000	
1936	426,867,000	425,419,000	*1,448,000	* 3	426,867,000		402,279,000	23,140,000	62,217,000
Daily average	1,404,000	1,399,000			1,404,000		1,323,000	76,000	
Increase, 1937	48,303,000	43,486,000			48,303,000		34,358,000	9,128,000	11,264,000
	11 3%	10 2%			11 3%		8 5%	39 4%	18 1%
Kerosene									
Ten months—									
1937	53,623,000	50,379,000	*3,244,000	*6 4	53,623,000		42,826,000	7,553,000	8,877,000
1936	45,794,000	45,734,000	*60,000	* 1	45,794,000		40,388,000	5,346,000	7,976,000
Increase, 1937	7,829,000	4,645,000			7,829,000		2,438,000	2,207,000	901,000
	17 1%	10 1%			17 1%		6 0%	41 3%	11 3%
Gas Oil, Distillate Fuels and Residual Fuel Oil¶									
Ten months—									
1937	411,356,000	398,091,000	*13,265,000	*3 3	390,906,000	20,450,000	360,654,000	37,437,000	120,283,000
1936	367,155,000	358,200,000	*8,955,000	*2 5	351,621,000	15,534,000	330,476,000	27,724,000	112,940,000
Increase, 1937	44,201,000	39,891,000			39,285,000	4,916,000	30,178,000	9,713,000	7,343,000
	12 0%	11 1%			11 1%	31 6%	9 1%	35 0%	6 5%
Gas Oil and Distillate Fuels									
Ten months—									
1937	120,469,000	115,087,000	*5,382,000	*4 7	119,928,000	541,000	89,910,000	25,177,000	28,101,000
1936	102,706,000	94,977,000	*7,729,000	*8 1	102,574,000	132,000	78,171,000	16,806,000	27,659,000
Increase, 1937	17,763,000	20,110,000			17,354,000	409,000	11,739,000	8,371,000	442,000
	17 3%	21 2%			16 9%		15 0%	55 8%	1 6%
Residual Fuel Oils									
Ten months—									
1937	290,887,000	283,004,000	*7,883,000	*2 8	270,978,000	19,909,000	270,744,000	12,260,000	92,182,000
1936	264,449,000	263,223,000	*1,226,000	* 5	249,047,000	15,402,000	252,305,000	10,918,000	85,281,000
Increase, 1937	26,438,000	19,781,000			21,931,000	4,507,000	18,439,000	1,342,000	6,901,000
	10 0%	7 5%			8 8%	29 2%	7 3%	12 3%	8 1%
Lubricating Oils									
Ten months—									
1937	29,432,000	29,127,000	*305,000	*1 1	29,432,000		19,848,000	9,279,000	6,789,000
1936	25,485,000	25,937,000	452,000	1 7	25,485,000		18,917,000	7,020,000	6,576,000
Increase, 1937	3,947,000	3,190,000			3,947,000		931,000	2,259,000	213,000
	15 5%	12 3%			15 5%		4 9%	32 2%	3 2%
Petroleum Wax (Lbs.)									
Ten months—									
1937	458,937,000	440,576,000	*18,361,000	*4 1	429,240,000	29,697,000	248,944,000	191,632,000	128,995,000
1936	402,786,000	404,412,000	1,626,000	4	388,920,000	13,866,000	250,879,000	153,533,000	113,049,000
Increase, 1937	56,151,000	36,164,000			40,320,000	15,831,000	†1,935,000	38,099,000	15,946,000
	13 9%	8 9%			10 4%	114 2%	† 8%	24 8%	14 1%

*Excess supply. †Decrease. ‡Crude oil only. §Includes finished and unfinished refinery gasoline and natural gasolines. ¶Gas oil and fuel oil equals gas oil and distillate fuels plus residual fuel oils. Note: Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products are based on refinery shipments.

Crude Oil Run to Stills and Total All Oils (Bbls.)

Ten months—	Total imports§	Total exports§	Total crude to stills	Per cent yield gasoline‡	Nat. gasoline production	Total supply all oils*	Total demand all oils*	Stocks all oils Oct. 31
1937	48,463,000	143,805,000	985,462,000	47 1	40,828,000	1,157,816,000	1,113,325,000	563,137,000
Daily average	157,000	473,000	3,242,000		134,000	3,809,000	3,662,000	
1936	47,377,000	107,758,000	885,941,000	47 2	34,260,000	993,546,000	1,007,815,000	527,431,000
Daily average	156,000	354,000	2,585,000		113,000	3,268,000	3,315,000	
Increase, 1937	1,086,000	36,047,000	99,521,000		6,568,000	164,270,000	105,510,000	35,706,000
	2 3%	33 4%	11 2%		19 1%	16 5%	10 5%	6 8%

*Total all oils includes crude and refined products, natural gasoline and benzol. †Decrease. ‡Includes natural gasoline blended at refineries. §Includes crude oil and refinery products. In case of imports includes receipts in bond and for domestic use. All data based on Bureau of Mines reports.

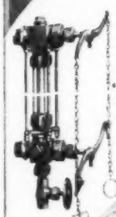
PENBERTHY REFLEX GAGE

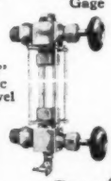
(LICENSED UNDER JERGUSON PATENT)

for Oil Field, Locomotive Type, and Marine Boilers

Automatic Injector

Ejector, Syphon or Jet Pump


"Navy Type" Liquid Level Gage


"Safeguard" Automatic Liquid Level Gage

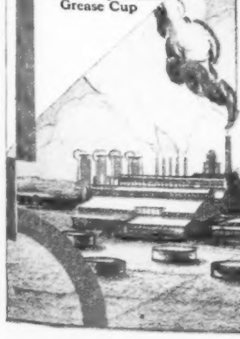
"All-Iron" Automatic Liquid Level Gage

Gas Engine Lubricator

Snap Lever Oiler

Plain Brass Oil Cup

Plain Compression Grease Cup



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INTERNATIONAL NEWS

Tampico Refinery Workers Out Protesting Delay in Decision

About 5,000 Mexican refinery workers in the Tampico area walked out at noon December 10 on a 24-hour strike in protest against the Federal Labor Department's delay in announcing its decision in the labor syndicate's wage controversy with American and British oil companies. The walkout was staged despite the threat of invoking "legal sanctions" against the workers made by President Lazaro Cardenas.

Workers in the southern field warned that unless the ruling, pending several months since the hearings were completed by the Federal Board of Arbitration and Conciliation, is issued by December 18 they will strike two days later.

The president's threat of sanctions was in the form of an order to the labor department in event of a strike. In his order, the president transcribed a message to him from Mexican Eagle Oil Co., subsidiary of Royal Dutch-Shell, which protested against any walkout and pointed out the company was in no way responsible for the delay in the ruling. Mexican Eagle's chief producing property in the Poza Rica field was held idle for several weeks during the latter part of the summer due to a local strike.

Indications that Mexico's oil industry may still hold the "whip hand" in evolving a solution to the existing strained financial conditions was given last week in dispatches from Mexico City. It was reported that the Mexican government has taken steps toward placing the entire industry on a basis of partnership with the administration. This would be accomplished by extending approval of concessions in return for stipulated royalty interest in the various properties over which any title question now exists.

The Mexican government used the royalty settlement basis in connection with recent approval of concessions to Mexican Eagle Oil Co., which acquired unclouded title to extensive acreage in the Poza Rica field. Royalty interest retained by the government ranged from 15 to 35 per cent with the scale increasing in ratio to desirability and location. of the tracts. Subsequently, Mexican Eagle claimed the basis of settlement was not one of royalty, but rather of participating interest retained by the government, but it has not been made clear whether the government is required to carry its portion of the operating expense involved.

It was indicated in reports from Mexico that no further concessions would be granted unless arrangements similar to those prevailing in Mexican Eagle's Poza Rica deal are made between the companies and the government. This is the result feared by other operators in Mexico when the original deal was announced. It was pointed out by oil men in Mexico and also in the United States familiar with conditions there that other Mexican prospective oil land is not known to have the potentialities of the Poza Rica field and that the same yardstick could not be applied.

Although it was reported from Mexico City that almost all American oil companies have been approached on the question of granting royalty or an interest in exchange for clear titles to concessions, this development had not been reported to New York offices. Representatives of American companies in Mexico declined to comment there.

It was established, however, that Secretary of Finance Edurado Suarez and the head of the National Petroleum Administration, Manuel Santilyan, left Thursday for New York. Their specific mission was reported to be in connection with two private concerns who are interested in Mexican oil lands. One was said to be Davis & Co. of Boston. The Mexican government will offer final approval of concessions the company claims in the Poza Rica field in return for a loan of $5,000,000. Other similar negotiations have been carried on, according to Mexico City reports, with Cory Brothers of London which would bring the government a loan of $10,000,000. There is doubt that the latter deal can be negotiated because of the failure of the government to deposit the collateral required.

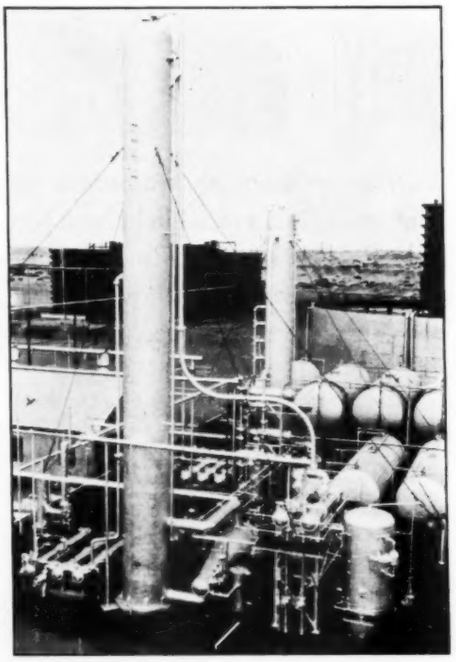
While there was no specific information that the Mexican officials will discuss the question of government participation in future oil concessions with American companies this procedure was regarded probable. Meanwhile, it is reported the government's decision in the oil wage dispute between companies and the labor syndicate is being delayed until the relationship standing can be determined. It is regarded probable the Mexican government is considering a favorable decision in the wage dispute before the companies as an additional incentive to either accept the royalty terms or make a direct loan to relieve the strained financial position. With assurance of a royalty participation in present and future production of oil, the government feels it would be in position to negotiate adequate financing in the open money market. Additional capital is required in Mexico to carry forward the agriculture program.

Venezuela Production Falls As Demand for Crude Lessens

For the first time since January the Venezuelan crude oil production curve turned downward last month. Through each of 10 preceding months this year production increased reaching a peak of 17,547,297 bbls. in October, or a daily average of 566,042 bbls.

November's production estimated on a comparable basis with preceding months dipped to 16,862,185 bbls., a daily average of 543,942 bbls., the lowest monthly total since last July. During August, September and October Venezuelan production exceeded 17,000,000 bbls. each month reaching an all-time peak in October.

All of the larger fields including Lagunillas, Tia Juana, La Rosa, Quiriquire suffered losses in production in November. Part of the loss is explained by the fact that November contained one day less than the preceding month, but even in daily average output the recession was not noticeable.



Stabilizer equipment in the Lomitos gasoline plant

The market demand for Venezuelan crude oil definitely slumped in November and in most instances the companies operating in that country were forced to adjust their output to a comparable extent.

The slump was most pronounced in Mene Grande Oil Co.'s Tia Juana field production which is a heavy tar oil. A curtailment of drilling operations in line with the slump in demand for crude coupled with a sharp decline in pressure were the factors contributing to restricted production. Mene Grande's production in November was approximately 1,809,000 bbls., compared to 2,062,000 bbls. in October. Lago Petroleum Corp. also recovered less oil in November than in October by approximately 341,320 bbls. Venezuela Oil Concessions' recovery in November was less than 12,000 bbls. below that recorded in October and was therefore strictly a calendar loss because of the shorter month.

Outside of the drop in Tia Juana production, the most outstanding change last month occurred at La Paz where Venezuela Oil Concessions continues with its development program increasing production materially during each of the past two months. By increasing 26,328 bbls. in November, the La Paz field replaced El Mene in the ranking of fields and staged an increase of more than 50 per cent over the output of 51,503 bbls. reported in October.

Through November, Venezuela's 1937 production is estimated at 165,620,084 bbls. which assures the country of an all-time record even though an abrupt cessation should occur. The prospective record is all the more impressive in view of the limited production in January and February when labor difficulty interfered with normal operations.

The November estimated production figures follow:

VENEZUELAN PRODUCTION—IN BARRELS

(By Companies)

Company—	Nov., 1937	Daily avg. Nov.	Nov., 1936
Lago Petroleum	5,229,476	168,693	4,419,607
Venezuela Oil Concessions	5,220,833	168,414	3,276,500
Standard of Venezuela*	2,832,112	91,358	2,679,606
Mene Grande Oil Co.	1,809,000	58,355	1,232,000
Caribbean Petroleum Co.	1,287,678	41,538	1,277,900
Colon Development Co.	368,235	11,879	326,200
British controlled	66,030	2,130	76,530
North Venezuela Pet.	48,821	1,575	53,327
Totals	16,862,185	543,942	13,341,670

*Includes Creole's share of lake production.

(By Fields)

Lagunillas	7,991,633	257,795	7,451,440
Tia Juana	2,274,139	73,358	.....
La Rosa-Ambrosia	2,233,933	72,062	1,787,689
Quiriquire	2,141,508	69,081	2,080,253
Mene Grande	1,287,678	41,538	1,277,900
Tarra	368,235	11,879	326,200
Cumarebo	195,284	6,300	213,308
Pedernales	142,404	4,594	28,350
Concepcion	83,010	2,678	87,000
La Paz	78,331	2,527	13,000
El Mene	66,030	2,130	76,530
Totals	16,862,185	543,942	13,341,670
Total October, 1937	17,547,297		
Daily avg. Oct., 1937	566,042		

International Petroleum Co. Gets Ecuadorian Grant

An oil exploration concession covering approximately 500,000 acres along the Ecuadorian sea coast is reported to have been granted to International Petroleum Co., South American subsidiary of Imperial Oil Co., Ltd., of Toronto, Canada.

Acquisition of this new concession is further evidence of the activity currently under way by virtually all companies operating on an international scale toward obtaining additional exploratory rights.

International Oil Co. is the largest producer in Peru and its subsidiary, Tropical Oil Co. is the only producer of commercial quantities of crude in Colombia.

At present Anglo-Ecuadorian Oilfields, Ltd., is the largest producer in the country which has a daily average output of approximately 6,000 bbls. per day.

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Cannibal-Infested Land Oil Prospect

NEW YORK, Dec. 13.—The oil industry, personified by three of its largest American and British units, is opening a new frontier in the Netherlands East Indies. Fulfillment of a program of investigation launched nearly two years ago is not yet attained, but a vast amount of detailed knowledge of structural conditions existing in that cannibal-infested territory has been gained.

It was inevitable that attention of oil men and their exploration efforts would be attracted eventually to New Guinea, or Papua, the name by which it is perhaps better known. The island appears to be linked with others in the Netherlands East Indies, including Java, Sumatra and Borneo to name only the largest. Oil has been produced for years in Java, Sumatra and Borneo as well as Ceram, which is the nearest productive territory.

In a review of the methods employed in New Guinea operations, which holds the unique distinction of being the largest aerial photography project ever attempted, George F. Barnwell, of Nederlandsche Koloniale Petroleum Maatschappij, relates many interesting side lights. Excerpts and condensations of Mr. Barnwell's story written for The Lamp, Standard Oil Co. (New Jersey), follow:

Until the discovery of gold in 1925 in the British section of New Guinea, the eastern half of the island, it was regarded as a fit place for nothing other than cannibals. Prior to discovery of the precious metal, the only commerce from New Guinea consisted of once-fashionable birds of paradise and coconuts. Since discovery of gold and the later use of airplanes in the development of formerly inaccessible deposits, early estimates of the unoccupied domain's value have been revised.

Exploration Work

Revival of interest in New Guinea both by industry and government eventually led to launching of oil exploration work. The Netherlands New Guinea Petroleum Co. was formed for the purpose of examining the oil-producing possibilities and to engage in its development and production if observations justify. The New Guinea company is a new international enterprise in which the participating companies, Nederlandsche Koloniale Petroleum Maatschappij (Standard-Vacuum), Bataafsche Petroleum Maatschappij (Royal Dutch) and Nederlandsche Pacific Petroleum Maatschappij (Standard Oil Co. of California), have placed their joint holdings and are furnishing the required capital for exploration and development on a share basis. Standard-Vacuum and Dutch Shell groups participate 40 per cent each and Standard of California has a 20 per cent interest.

The Netherlands New Guinea company holds exclusive concession to exploration for oil and gas in an area roughly estimated at 25,000,000 acres, approximately the size of New York state. The concession was granted by the Netherlands parliament on December 14, 1934, and became effective January 1, 1936. There are five separate blocks involved, covering selected tracts in the coastal belt of swamps and lowlands which, in the light of oil seepages, had previously been earmarked by government geologists as possible oil-bearing lands. The search for structural features in New Guinea was first started by private parties, but intrusion of the large powerful, adequately financed British and American oil companies was welcomed by the Netherlands government as a means of developing its outlying East Indian possessions.

About 40 per cent of the area is permanent swamp, the remainder low, hilly terrain rising to rugged mountains that reach elevations as high as 4,000 feet. Beyond the limits of the concession boundaries, the land surface humps into high mountain chains to form the imposing central backbone of the island, crowned by peaks up to 17,000 feet covered with snow fields and glaciers.

Out of the 25,000,000 acres now covered by concession, the Netherlands New Guinea company is obligated to reduce its holdings to about 10 per cent. The remaining 2,500,000 acres is protected by contract with the Netherlands for 40 years.

Air Photographs

Faced with the necessity of examining a huge unmapped territory in a comparatively short period, the Netherlands New Guinea company decided to photograph the entire concession, the largest project of its kind ever undertaken. Four airplanes (two land planes and two seaplanes) have been used in this preliminary phase, requiring a special staff of over 30 technicians, including pilots, navigators, photographers, mechanics and engineers, as well as a large administrative staff. Nearly 20,000 overlapping air photographs on a scale of 1:40,000 (metric) exposed at an elevation of 12,500 feet will be taken before the job is completed.

The wide use of aerial photography has circumvented many of the inherent obstacles in examining such an extensive area. It has been possible by detail stereoscopic studies of the air photographs to work out the main features and many details of the geology in addition to the topographic forms. By use of the so-called photo-geological maps, which are prepared beforehand from the air photographs in the laboratory at Babo, the actual field investigations undertaken have been facilitated. By elimination of the valueless area the ground studies have been concentrated on the more favorable appearing territory.

The problem of communications has been solved by the use of the radio, telegraph and telephone. Airplanes, ships, supply bases, weather stations, reconnoitering parties and geological expeditions are equipped with portable sending and receiving radio sets, which together form a hook-up of some 15 stations by which all activities are reported and coordinated daily. Aircraft has destroyed the country's isolation. Where formerly it took six weeks to reach New Guinea from Europe by fast steamer, it is now possible to do the trip in a few days by air. With many natural landing places, quick, safe and economical transportation is now possible to almost every part of the island by seaplane. From the Netherlands New Guinea company's main camp at Babo to Seroei, on the north coast, is five days' travel by a small coast steamer, but only three hours by air. To Aika, on the south coast, three days by water and only four hours by plane.

Cannibalism still exists today, but is confined to the tribes living in the hinterland that have not yet been brought under the permanent control of the government. Towards strangers the natives are at first shy and timorous, but on acquaintance they exhibit a friendly inclination that is often quite overwhelming until their unfettered curiosity has been satisfied.

Primitive Natives

Many of the natives have been used as bearers and guides on geological excursions passing through the country, but only for short periods, since they are unaccustomed to any sort of sustained occupations and are afraid to go very far afield from their villages for fear of losing their heads. Services are paid with white or red cotton cloth, tobacco, fish hooks, darning needles, mirrors, knives, axes and other tools and trinkets, since money has no value in Papua. In conducting operations in New Guinea, the company has imported large numbers of Dajaks (Borneo) Javanese, Makassarese (Celebes) and Chinese.

Airplanes passing high overhead remain implements of consternation to the inhabitants. The inland tribes who have had no opportunity to inspect the planes when at rest on the coast or river landing ports are fearful of the monsters.

Babo, the company's main headquarters, situated on the south shore of McClure Gulf, although scarcely a year old and only a rough jungle camp of some 40 dwellings and diverse buildings, has grown into an important settlement. With its 70 European and nearly 500 Asiatic inhabitants it is today the largest "town" in the East Indies "East of Makassar." As the company home base, Babo may be aptly described as the hub of Papua. The exploration work has not advanced sufficiently to justify an expression on the New Guinea oil-producing possibilities.

Devil dancers at Port Moresby, Papua, New Guinea
Associated Press Photo

ENGINEERING AND OPERATING SECTION

Presenting modern developments in operation of producing properties, refineries and gasoline plants, and pipe lines, including petroleum research in the field and laboratory

This Week

GENERATION OF ELECTRICITY IN REFINERIES INVOLVES ENGINEERING PROBLEMS—By George Weber . . Page 36

In determining the design and size of the generation unit for use in a refinery generating its own electrical power several factors, such as future demand and selecting the most economical size to supply the peak load, must be considered. These factors are discussed and trends in electrical demand and power plant construction on the Gulf Coast are pointed out.

ILLUSTRATED OPERATING IDEAS Page 43

Guide and support for bull ropes on clean-out string. Safety score board for listing number of lost-time injuries. Moving oil field house by truck. Reciprocating pump driven by bandwheel power. Telephones installed on oil field leases near Clay City, Ill., allows close contact between leases and office.

APPLICATION OF LIQUEFIED NATURAL GAS TO OIL DEVELOPMENT AND PRODUCTION—By A. E. Sweeney, Jr. . . . . Page 44

Although the demand for butanes and propane for industrial uses and for charging stock in polymerization units is increasing, large quantities are still available that could be utilized to better advantage. Here the author discusses their use as fuel in internal combustion engines, as compared with other fuels.

APPLICATION OF AUTOMATIC CONTROL IN OIL REFINING—By Donald J. Bergman . . . . . Page 49

Modern refining has been made possible through the application of automatic regulating and recording instruments. The use of such instruments in the operation of modern cracking units involves many problems and the author discusses these problems in an unusually familiar and informative manner.

PROBLEMS FROM READERS—By L. G. E. Bignell Page 59

Repressuring shallow wells in old areas of western Kentucky. History of proration and information on Interstate Oil Compact and Connally act. Life of gas fields and relation between rock pressure and calibrated capacity of wells in western Kentucky.

QUESTIONS ON TECHNOLOGY — By C. K. Francis, Ph. D. . . . . Page 60

Kerosene treating methods and grades of kerosene. Properties and uses of bentonites. Magnesium hydroxide method for sweetening gasoline.

Generation of Electricity in R

By GEORGE WEBER Involves Engineering P

In considering the supply of electrical power for plant uses, the refiner's primary decision concerns purchase of electricity from outside sources, or generation within the plant. Factors influencing this choice will vary with each individual refinery. As a rule the smaller refineries will find it advantageous to purchase electrical power, thus eliminating the relatively large first cost of small-capacity power plants.

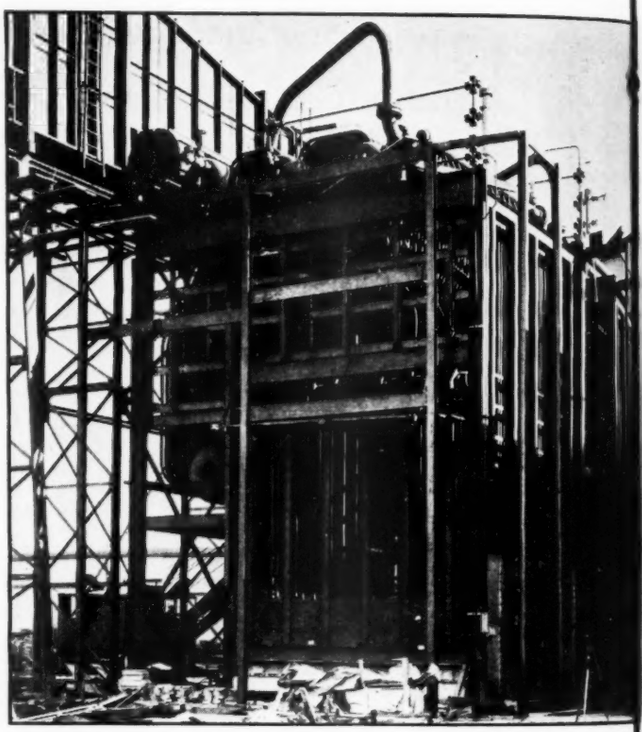
It is found, however, that Gulf Coast refiners, with few exceptions, generate their own electricity within the plants. Mainly in the larger and older refineries this policy is one which has carried through to the present from a time when purchased electrical power, with its present reliability, was not known. The economy of refinery power plants was aided in this respect by the original investment in initial plants and equipment. Another important factor favoring self-generated electrical power has been the supply of cheap, unmarketable fuels, which, through conservation, found use in furnaces and boilers within the plants. Also, although rather large initial costs are involved in the installation of high-pressure steam power plants, the production of steam at high pressures entails little additional cost over the generation of the lower pressure steam necessary in processing and direct steam power. These factors, although varying in importance with each individual plant on the Gulf Coast, combine in the main to influence the general adoption of refinery electrical power plants.

Notable exceptions to this policy are found in two of the larger plants of the area, however. The latest major refinery to be constructed on the Gulf Coast uses purchased electrical power entirely. The reasons for this policy may be seen in the uninterrupted service which is now made available by Gulf Coast utilities, and in the large initial cost of installing complete generating equipment.

A second large refinery located in the Gulf Coast sector purchases both electrical and steam power, including steam used in processing, thus eliminating all necessity of power maintenance. These two plants are not, however, representative of the general Gulf Coast refinery.

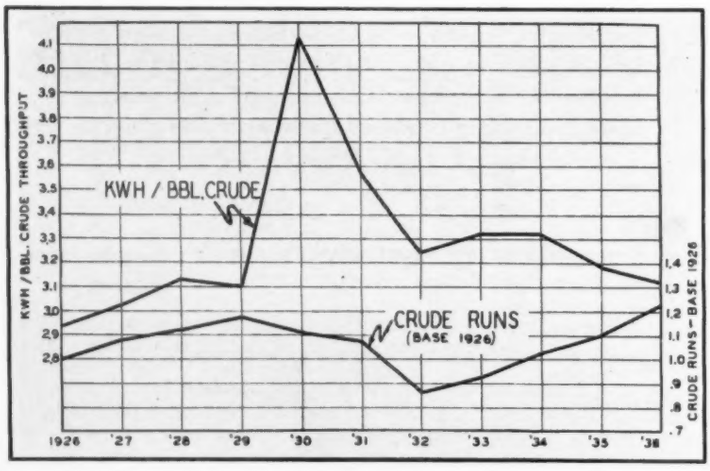
If the decision to undertake the generation of electrical power within the refinery is reached, the engineer's problem resolves itself into one of determining the design and size of the unit. In this respect a large number of factors have influence. For present needs the power plant must be so flexible as to care for peak demand without entailing the high cost of operating at part capacity for ordinary demand conditions. In addition to caring for present demand fluctuations, the refiner is faced with the problem of anticipating electrical demands which may arise in the future due to changes in plant equipment and processes.

This latter factor is one of increasing importance. The refining industry is undergoing a series of changes in technology and operating methods which is unparalleled in the oil industry. These trends, while they can be projected into the near future, cannot be anticipated with certainty by the refiner for the useful life of a power plant. Here again the individual policies and equipment in each separate refinery governs the size and design of the power plant to be installed.



New high-pressure boilers operating at increased economy, such as the one here shown under construction, are being installed in coastal refineries to care for increased demands

Currently a number of refinery trends are under way which have opposing influence on the demand for electricity. Generally, the adoption of cracking, polymerization and hydrogenation units which operate at high pressures, with much recycling at high rates of flow, will increase the demand for power. In the newer installations, the usual policy is to use electrical equipment wherever such units are adaptable. Refinements in electrical equipment and improvements in their safety of operation are mainly responsible for that policy. Thus it would seem that electricity should generally increase in use in modern refining. However, in other phases of refining, particularly in lubricating oil manufacture, highly efficient units for solvent refining are finding widespread adoption and although electricity is used to a considerable extent, there is a marked saving in power over the former methods of treating lubricating oils.



Electrical demand in representative Gulf Coast refineries

Reorganization of large, complete refineries to conform with the present trend toward more efficient operation further tends to decrease the need for power generally, including electrical power. Refiners are becoming daily more efficiency minded, in marked contrast to the attitude of only a few years ago when production was carried on apparently unmindful of the mounting costs of electrical and steam power with relation to the increases in crude processing capacity. The factor of electrical demand is further affected by policies of individual refiners, who differ in their opinions of the relative merits of electrical power as against steam, diesel and gas power.

Another factor in the design of power plants has arisen from the continuous changes in refining technique. Most plants installed in the large Gulf Coast refineries in the past have been designed to utilize various types of fuel.

Fuels burned in furnaces and boiler units of refineries generally consist of waste products in the form of unmarketable oil, sludge, coke or refinery

Refineries Problems

Smaller refineries find it economical to utilize diesel power for generating electricity

gases. The fuel to be used in each individual plant depends upon the supply of this waste, and more often, particularly in the past, upon its disposal. Therefore the fuel which cannot be marketed or used in the manufacture of marketable products is generally utilized in the refinery. Increased economy and greater utilization of wastes in the industry has therefore caused changes in the design of furnaces and boilers, and further moves must be taken into consideration in the installation of present-day plants.

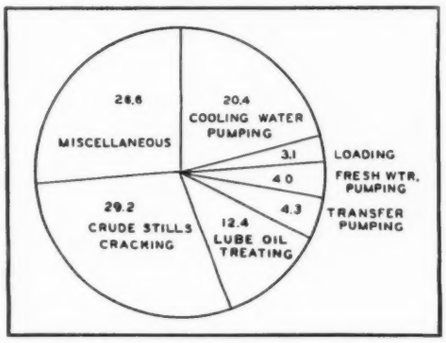
In the past considerable amounts of waste products were available for burning in boiler plants. Early cracking processes produced coke, which, though it found a relatively ready market outside the refinery in most instances, was utilized in powdered form in many boiler installations. Coking in modern cracking plants has been largely eliminated.

Another waste fuel, which is rapidly disappearing is the acid sludge produced in lubricating oil manufacture. Burning of sludge in refinery heaters was more an expedient to disposal than to waste utilization. The fuel supply is currently affected by the adoption of polymerization and vapor recovery in refineries. Although the decrease in refinery gas available for fuel purposes is not yet greatly affected by the increased processing of cracked gases, the developments of the future may well bring about the utilization of other fuels which cannot be so profitably processed for finished products.

Trend in Electrical Demand

A survey of the electrical demand in representative Gulf Coast refineries over the past decade illustrates the trend in general. According to figures released by these refiners, the present trend in crude runs is on the increase, and the electrical demand based on crude throughput is declining. Using the crude processed during 1926 as an index, it is noted in the accompanying figure that a gradual increase was sustained until 1930, after which runs for three years declined to a low of 86 per cent of the 1926 schedule. Since 1932, however, crude runs show a gradual gain, to a 20 per cent increase over the base figure.

Electrical demand, plotted in terms in kilowatt hours per barrel of crude processed, rose with one year's exception, to a peak of 4.09 in 1930. This peak was brought about mainly by the decline in crude runs, and the carry-over of use of much electrical equipment installed for operation at higher capacity. A sharp decline followed the 1930 peak, and except for power demand in 1933 and 1934, which remained at 3.32 kilowatts per barrel of crude run, the rate has shown a decline for the past two years. Increased efficiency in general plant maintenance is primarily responsible for the present trend, coupled with the increased economy of operating at capacity for little more overhead expense.



Breakdown of electrical demand in representative Gulf Coast refineries

On the subject of economy in power demand in refineries an important step is being taken in some refineries at present. In the recent past, the demand for greater economy of operation promoted the adoption of electrically powered contrifugal pumps as being more efficient than the outmoded steam reciprocating type. Currently the economy drive is still on, but the trend in power shows indications of swinging back to steam. The reason for this is found in the very efficient new high-speed steam turbines now available.

Such units are being installed on jobs requiring 200-hp. and over. New refinements make them equally as applicable as the larger electrical motors. The direct use of steam circumvents the power losses occasioned in electrical power use, including generator losses, distribution losses and additional losses in converting the power back to mechanical pumps. This advantage of steam turbines is, however, as yet limited generally to the larger installations.

Another important economy step has been made in the handling of cooling water. New cooling towers show much greater efficiency, and the application of forced draft has further contributed to savings in this sizeable power demand. Cooling water pumping in Gulf Coast refineries requires an average of more than one-fifth of the connected load, and any increase in cooling efficiency is clearly shown in power demand decrease.

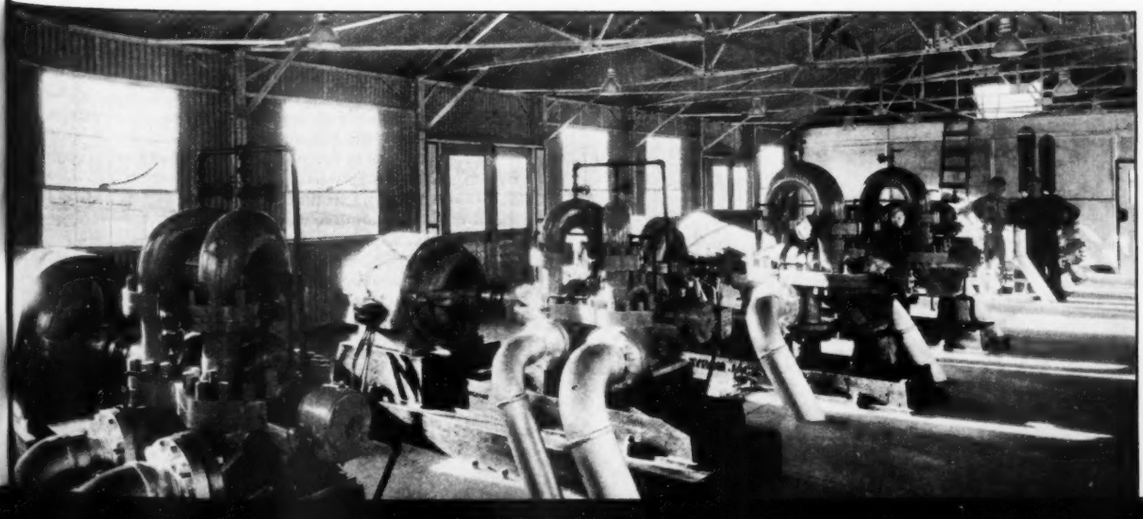
The serious effort of refiners to cut operating costs is shown in the establishment of rate departments and test departments which make studies of the various operating costs including power demand. Their work is also a factor in the greater efficiency of present-day refinery maintenance.

The revival of refining activity and new construction following the depression has brought power demands steadily upward, however. The actual demand for electricity in the plants represented in this survey began an unbroken upward trend in 1931. Some plants increased demand throughout the 10-year period. The decline shown in kilowatt hours per barrel of crude run since 1931, is due then to the fact that refiners have increased crude runs at a greater rate than they have added to electrical power demand.

The figures representing electrical power consumption on the Gulf Coast are considered high in comparison to those of refineries in other sections. This might be explained by the size and history of the Gulf Coast plants whose data made up the averages plotted in the curve. Large complete refineries, maintaining much usable equipment which is not as efficient as modern equipment, utilize more electricity than newer plants and smaller refineries.

Most of them have large power plants, and the demand for process steam in large quantities makes the generation of electricity by high-pressure steam economical. Much electricity is utilized for

Large volumes of oil may now be delivered to refineries by high-pressure pipe-line pumps



purposes not directly related to refinery processes, such as welding, traction, mechanical handling, and in maintenance of docks and tanker fleets.

Another reason for larger power demands is seen in the increased amounts of cooling water needed in the warm, moist climate of the Gulf Coast. This factor becomes a major one in the summer when cooling water temperatures run high and great volumes are needed for normal plant operation. The newer refineries in this area show individual electrical demands lower than the average for the Gulf Coast, running about 1 kilowatt per barrel of crude throughput according to current figures.

In line with the movement toward greater economy in plant operation, plant accounting systems now call for the metering of power to each of the important units in the larger refineries. In computing the costs of operation, some companies require a breakdown of power demands within the larger distillation and cracking units, to determine the costs of certain steps in the processes.

During the past three years Gulf Coast refiners have made considerable additions to their power plants. Increased demands for electricity in new units and processes, and replacement of older and inadequate plants, have been responsible for the general construction program.

The trend in new power plants is toward greater capacities, and increased economy of operation. Steam pressures and temperatures in new boiler units are higher than formerly, increasing the output of turbo-generators. If the electrical power demand were expressed in terms of the steam which generates it, the rate, based on crude throughput would show a much greater decline at the present time than is indicated by the kilowatt-hour per barrel relation. The new steam and electrical power plants are greatly improved in efficiency.

Some of the newer power stations utilizing high-pressure, superheated steam maintain a balance in their electrical and steam demands by means of bleeding from the turbines driving the electrical generators. In such designs, high- or low-pressure steam may be withdrawn from different points along the turbines for supplying refinery yard mains. In case of an increased electrical demand, the flow can be reversed and steam can be injected at the bleed points.

The same effect has been acquired in some plants where new power plants have been added. The higher powered turbines, operating on high-pressure steam, maintain back pressures which coincide with the throttle pressures of the existing turbines in the older plants. Thus the steam is utilized first in the new turbines, and then is charged to the lower pressure units. In addition, flexibility may be further obtained by floating a condensing turbine in the system. This small power unit, generating electricity, may be operated on 15-pound steam, converting the power to electricity in case of an oversupply of yard steam, and by-passing it to the plant in case the reverse is true.

Where new power plants have been installed, the increased energy in high-pressure steam is usually utilized fully in the generation of electrical power. Older, low-pressure steam plants are then maintained as standbys, to care for variable demands in process steam. This flexible system contributes to overall economy during regular operation, and provides for a sufficient reserve.

Transmission of power throughout the larger refineries is usually carried out at 2,300 volts and reduced to 440 and 110 volts for consumption. Because of the great importance of reliability of electrical power in refining processes, one of the largest plants in the area has provided for duplicate service in the more heavily loaded sectors of the refinery.

Transmission lines from two separate power plants lead to the units in the important areas of the plant. In case of failure of one current supply, the auxiliary line is automatically cut in, precluding costly shutdown or interruption of operations. This precaution is further carried out throughout the plant, by interconnection of all power plants to prevent cutout of any one circuit.

In maintaining as high a power factor as possible in the refinery electrical system, it is necessary to install synchronous motors to offset the effect of large induction motor demand. The desired effect of synchronous motors on the power factor cannot be best obtained if they are grouped together in one section of the system. For most efficient results, synchronous motors should, wherever possible, be placed throughout the plant adjacent to large induction motor groups.

Sealing Effect of Mud Minimized

Demonstration by engineers of the Bureau of Mines that mud of the kind used in drilling oil wells may "set" and become as hard as shale, when in contact with crude oil for a relatively short time, may have a far-reaching effect on methods of developing and operating oil fields. Engineers at the bureau's San Francisco laboratory devised a means of processing drilling mud with material insoluble in water but soluble in oil, with the thought that when an oil stratum is penetrated the hydrocarbons will attack the oil-soluble portion of the mud and pass through the mud plaster into the well. The most effective material that has been found is crude rubber cut into shreds about one-sixteenth inch in diameter and one-half inch in length. The effect is as though short pieces of string had been mixed with the mud plaster and pulled out after the plaster was in place against the oil bearing formation, leaving holes through which the oil and gas can enter the well.

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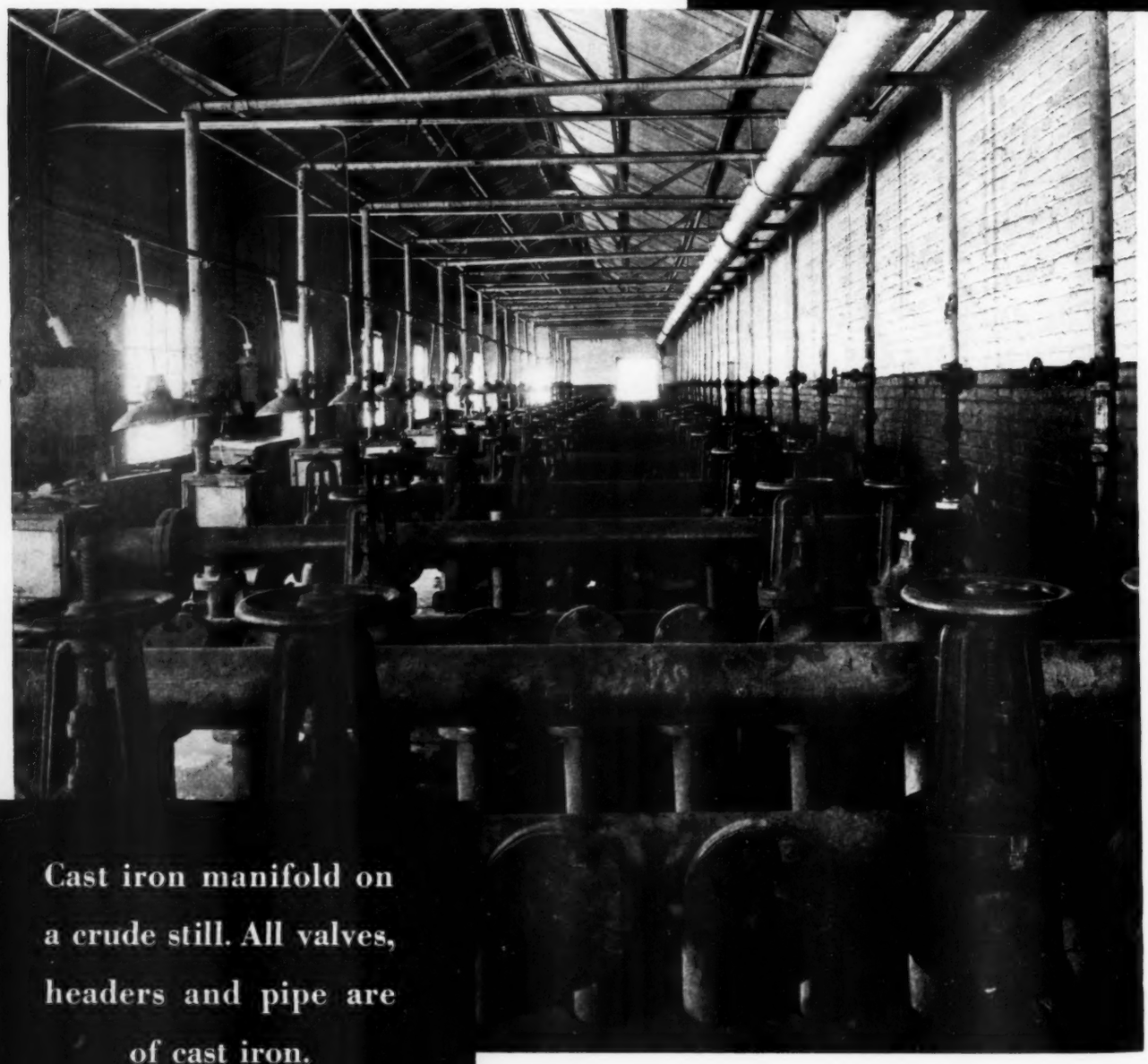
FOR LOWER MAINTENANCE COST— *CAST IRON PIPE*

THE watchdog of the refinery is the man responsible for keeping down maintenance cost per barrel of crude. He knows that, balancing first-cost against length and dependability of service, pipe cast from good gray iron is the most economical at many points in refinery operation. It is reliably resistant to corrosion under a wide range of conditions. It has a definite and considerable salvage value. Available in bell-and-spigot, plain or threaded end and flanged types, or with bottle-tight mechanical joints for high pressures. Diameters from 1¼ to 84 inches. Address inquiries to The Cast Iron Pipe Research Association, Thomas F. Wolfe, Research Engineer, 1015 Peoples Gas Building, Chicago.



Cast iron manifold on a crude still. All valves, headers and pipe are of cast iron.

OPERATING IDEAS

Safety Score Board

In order to give prominence to the importance of practices which promote safety in field operations, Gulf Oil Corp. has placed a score board in a conspicuous place near the entrance to a district office. The score is kept by months to show the number of lost time injuries occurring in the course of operations under the supervision of each foreman.

GULF OIL CORPORATION
GAFFNY DIVISION
LOST TIME INJURIES
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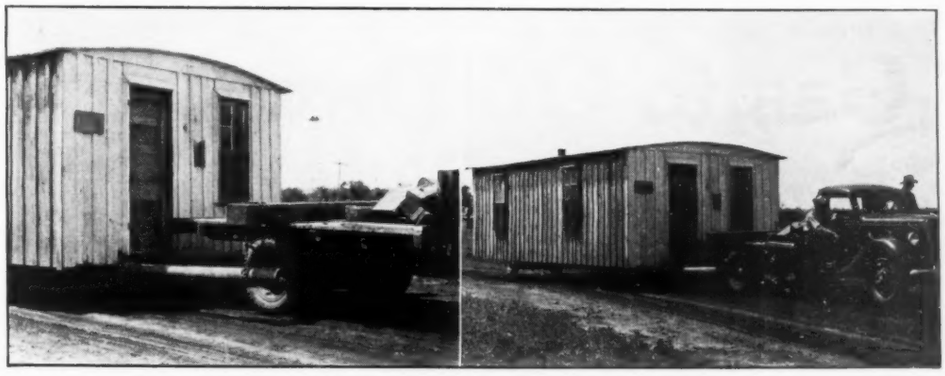
FOREMAN
O.E. STEVENSON 0 0 0 0 0 0
W.E. BUSHMORE 0 0 1 0 0 0
F. MUSGRAVE 0 1 0 1 1 0
J.M. CUMMINGS 0 0 0 0 0 0
FRANK SUTTON 0 0 0 0 0 0
IVAN HENSLEY 0 0 0 0 0 0
J.H. RYAN 0 0 0 0 0 0
F.E. CASENBERG 0 0 0 1 0 0
O.J. STEPHENS 0 0 0 0 0 0
W.E. COMFORT 0 1 0 0 0 0



Moving Oil Field House By Truck

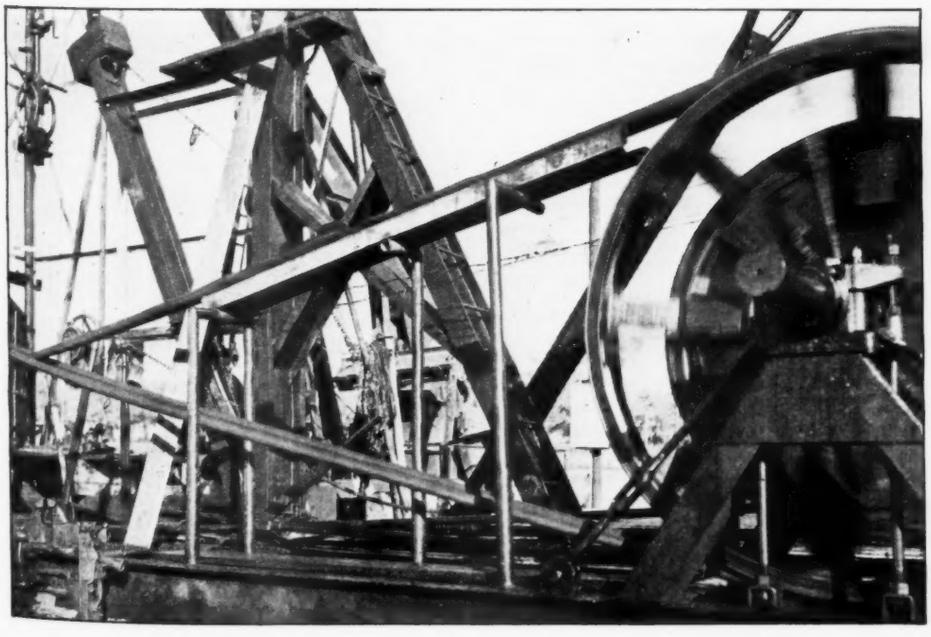
It is very common practice to move wooden oil field houses. Various methods are used. One means of carrying the house is to select two joints of 6½-inch drill pipe and the rear wheels and axle of an old truck. The drill pipes are firmly attached to the axle and then suspended by heavy chains from an 8- by 10-inch timber laid across the truck bed at the rear end.

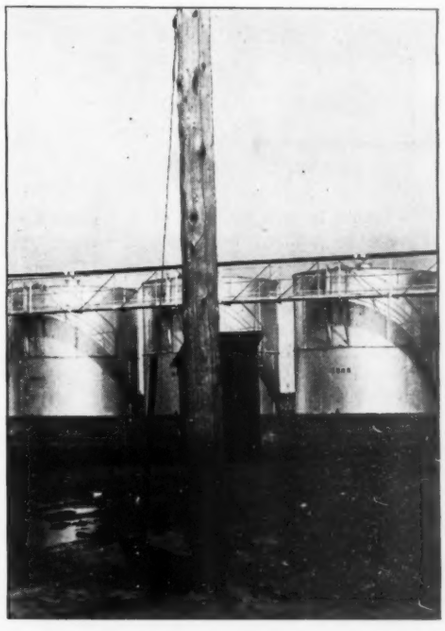
Pump Driven By Bandwheel

In the Smackover field of southern Arkansas one operator is using a reciprocating pump to move crude oil from lease tanks to his refinery several miles away. The pump is driven by a pull-rod connection from a bandwheel and is disconnected when not in use.

Guide and Support for Bull Ropes on Clean-Out String

A large oil company operating in the Fitts pool of Oklahoma, has a cable tool clean-out string, used in drilling wells deeper and for clean-out work. To eliminate the ropes tangling when thrown off the bullwheel on going in the hole, supports have been added for the bull ropes to rest on. The support, which also acts as a guide, is constructed from channel iron and welded to upright lengths of used pipe in order to place the support at the proper height.





Lease Telephones Installed

In the Clay City field of Illinois one major operator has installed telephones on each lease which are connected to the main production office and loading racks. By their use the switcher and pumper may keep in close contact with their superiors, thus the telephones are quite a time saver as many of the leases are separated by considerable distance.

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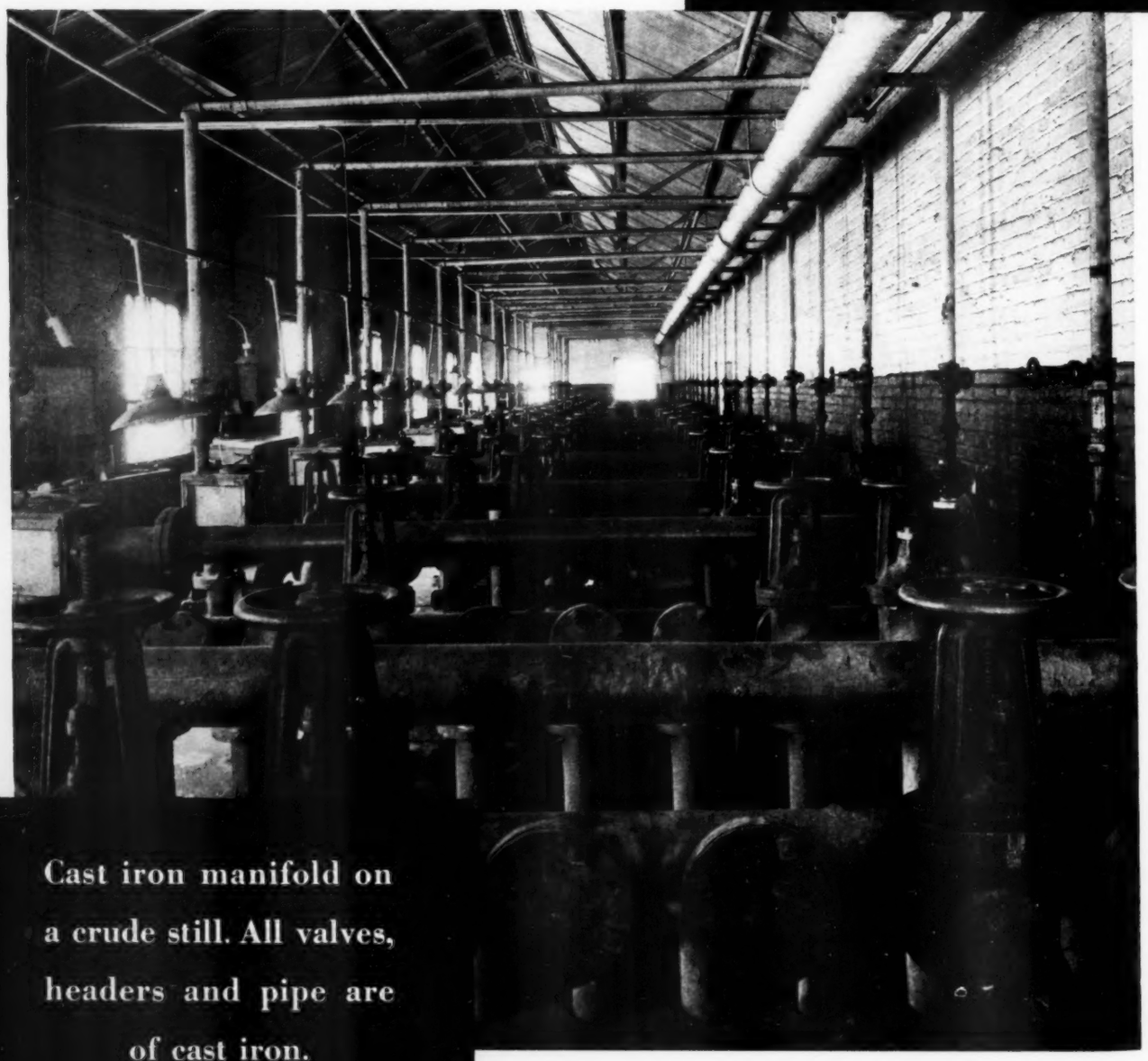

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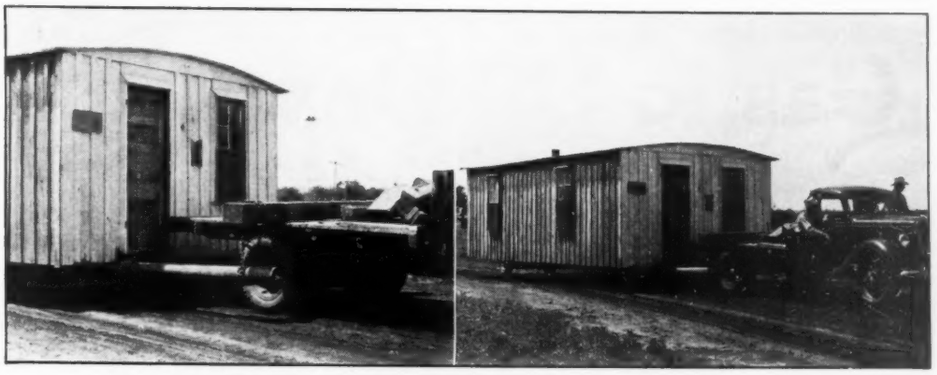

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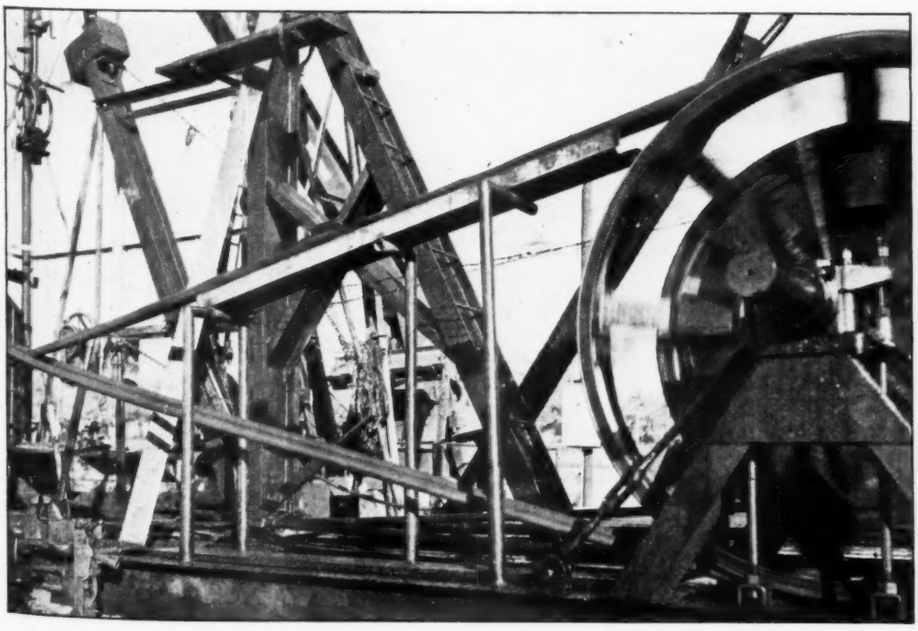

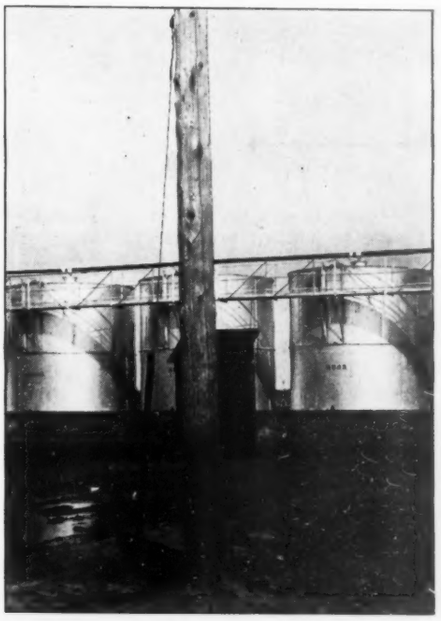

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Application of Liquefied Natural Gas to Oil Development and Production

By A. E. SWEENEY, JR.
University of Texas

Natural gas production in the United States during 1936 is estimated to have been 2,000,000,000,000 feet. A large portion was produced from the 30,000 dry gas wells, and the remainder from 350,000 oil wells which produced the gas along with 1,100,000,000 bbls. of oil.

This gas and oil contained large quantities of propane and butanes much of which have been wasted or used as fuel. Although some use of propane and butanes is being made through the development of polymerization, there are still

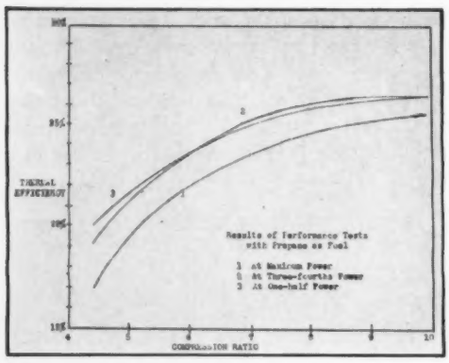
THERMAL EFFICIENCY
COMPRESSION RATIO
Results of Performance Tests with Propane as Fuel
1 At Maximum Power
2 At Three-fourths Power
3 At One-half Power

Figure 1

available large quantities of these gases which could be utilized to better advantage than at present.

Until quite recently nearly all of the propane and butanes were returned to the residue lines, while some was blown to the air. Too much butane introduced into the gas lines caused condensation, water hammer, and the formation of hydrocarbon hydrates.

In some localities these have been recovered as liquefied natural gas and sold under various trade names to consumers to whom natural gas is not available.

A comparatively recent and significant development for utilizing large quantities of these products is the polymerization unit for the production of high octane gasolines. But due to several economic factors, it is probable that this outlet for propane and butane will develop slowly among the smaller producers. Also, due to these same considerations, situations will occur where it will never be feasible to consider polymerization.

In view of this it is suggested that increasing quantities of liquefied propane and butane be utilized as fuel for internal combustion engines.

Butane Heat Values

The liquefied gases in general use are propane, butanes, or a mixture of these with some ethane. In some instances the pure constituents are prepared in relatively small quantities for special purposes. These compounds can be compared best for use as fuels in internal combustion engines by considering the heat of combustion of the air-gas mixture necessary for complete combustion. The maximum heat obtainable from the combustion of a cubic foot of gas and air mixture is shown in Table 1 for each compound.

Gasoline, when compared on this same basis (60° F.), shows a thermal content, for an optimum gas-air ratio, of 102.8 B.t.u. In as much as the boiling range of gasoline requires heating of the gasoline to a higher temperature to vaporize properly for combustion, this figure is reduced to 86.8 B.t.u. The superiority of liquefied propane and butane over gasoline on this basis is evident. It must be said, however, that full advantage of this superiority cannot be taken with the usual internal combustion engine. The type usually available is designed for the efficient burning of gasoline. This is particularly true with the internal engines commonly available for use in oil field development and production. To emphasize this point, some of the more important features in the use of oil field engines will be considered.

A.P.I. **— Delivered before East Texas chapter meeting at Kilgore, Texas, Dec. 14.**

The more common type of power used is steam, which has many advantages, but a prime disadvantage of being expensive. Technically, disadvantages to the use of steam are:

1. The use of steam requires large quantities of good fuel.
2. Its use requires adequate supply of good water.
3. A large expenditure for equipment is required.
4. The upkeep of this equipment requires additional expenditures.
5. Difficulty of moving and setting up equipment requires time.

Factor 5 is double important in that the time required in moving reduces the operating period of the equipment. In some cases the problem of obtaining fuel and water, together with the transportation of this bulky equipment to a location in rugged terrain, may make the use of other power advisable.

This problem had led to the use of the internal combustion engine in discovery and development work. Gas, gasoline and diesel engines have been used successfully. At present the high-speed multicylinder gas or gasoline engine has found favor in several sections of the country. These engines are used in the same manner as the diesel engine, that is, either directly connected to the drawworks and mud pumps, or to generators furnishing electric powers for the motors which drive the pumps and drawworks.

In considering fuels for internal combustion engines, Ricardo,[1] in "The High-Speed Internal-Combustion Engine," states:

"The properties of a fuel which determine its value for use in an internal-combustion engine are:

"1. Tendency to detonate.
"2. Latent heat.
"3. Volatility.
"4. Calorific value of the fuel.
"5. Heat value of the mixture.

"All volatile liquid fuels when vaporized and mixed with air in the proportion required to give complete combustion have, within very close limits, the same heat value per standard cubic inch of mixture, hence they all give the same power and the same thermal efficiency when used under the same conditions. It is only by varying the compression ratio or by altering the degree of vaporization in the carburetor or induction pipe that any variation in power output or efficiency can be obtained."

The tendency to detonate or knock has limited the maximum compression ratio used in internal-combustion engines. As can be seen from the study of Table 2, with butane, isobutane, or propane much higher compression ratios can be used than with ordinary gasoline.

These higher compression ratios result in great-

[1]Ricardo, Harry R. The High-Speed Internal-Combustion Engine, London, Blackie & Son, 1935, p. 8.

TABLE 1—HEATS OF COMBUSTION OF GAS AND AIR-GAS MIXTURES

Basis: **1 cubic foot at 14.7 lbs./sq. in. abs. and 60° F.**

	B.t.u. per cubic foot	
	Gas alone	Gas and air
Natural gas	1,100	97.2
Pure butane	3,278	104.9
Commercial butane	3,200	101.4
Pure propane	2,520	103.7
Commercial propane	2,500	101.7
Gasoline	....	102.8 (86.8 at 160° F.)

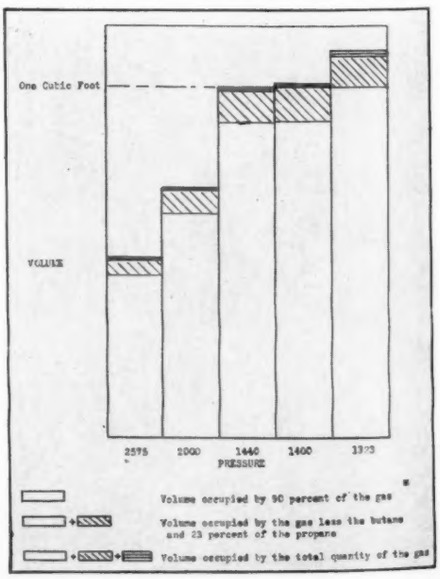

Figure 2

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In Operation

HERE is the new Larkin Formation Pack Shoe, which embodies many remarkable features never before attainable in a side-opening shoe:

1—Circulating, and washing-down with no side wash:
In most side-port shoes any wash or circulation washes walls and causes additional caving.

2—Set pipe right on bottom and cement:
With the new Formation Pack Shoe it is unnecessary to swing pipe in hole or to pick it up to cement, once it has been landed on bottom.

3—Side ports are closed until needed to cement:
The side ports are opened automatically by the pump pressure when shoe is set on bottom.

4—Cements all around pipe:
The numerous side ports allow for an even distribution of cement and minimize any chance of the cement channeling.

5—Centers pipe in hole:
The tapered rubber when set in rat hole centers the pipe accurately.

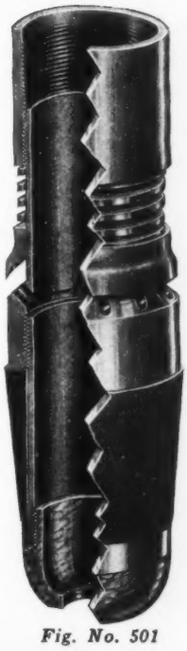

Fig. No. 501

LARKIN PACKER COMPANY, INC., ST. LOUIS, U. S. A.

ARKIN PACKER CO.

er power through increase in mean effective pressure, and consequent economy, both from heat and fuel consumption standpoints. It is possible that properly designed propane engines may operate at the same compression ratios as the diesel engine. Increased thermal efficiency is thus obtained without the disadvantages inherent to the diesel engine. The high-compression engine also has some advantages in operation. It idles better, requires less cooling water, and wears the connecting rod bearings less at high speeds.

Butane and propane are gases at normal conditions of pressure and temperature and enter the combustion chamber of properly designed engines at temperatures well below that necessary for the vaporization of a gasoline. This lower temperature of vaporization results in a larger quantity of available heat per explosion and consequently greater power output. Also, since the volatility will affect the distribution of the fuel to the cylinders, butane or propane will provide more even distribution than will gasoline, resulting in definite increase in power. This is a definite advantage in starting an engine. An additional advantage of volatility in a fuel is the reduction of dilution of lubricating oil. In one case engine distillate was used and the oil changed every 800 miles. After changing to butane, it was necessary to change oil only every 25,000 miles. In addition to these advantages, the carbon deposits in the combustion chamber were reduced and there was a noticeable reduction in the noxious exhaust gas odors, smoke, and soot often experienced with the heavier liquid fuels.

From information obtained from performance tests, liquid butane and propane show to greatest advantage when running at full load, especially where the distribution of fuel to the cylinders is the problem. For the same compression ratio, butane develops slightly greater power, but is not quite as efficient thermally as gasoline. At the higher compression ratios, where gasoline could not be used at all efficiently, the butane and propane operate at much higher thermal efficiency. Results of tests with propane shown in Figure 1.

The characteristics of an engine of chief interest to the user are torque and r.p.m. The torque developed by any engine is dependent upon the mean effective pressure developed in the cylinder. In an internal combustion engine maximum torque is obtainable only at high r.p.m. Consequently, an increase in compression ratio results in a material possible increase in torque. As use of propane and butane also increases the mean effective pressure at lower speeds, a distinct advantage results for oil field work, where high torque at low speed is desirable.

Another advantage to the use of butane and propane results from the fact that because of their low boiling temperature, the heat of vaporization of the liquefied gas can be used to help cool the engine water and thereby reduce the amount consumed. This may enable one to use very good water in a closed circulating system, thereby reducing the formation of scale, which is an objection to the use of natural waters.

At present these fuels cannot compete with natural gas, where the latter is available; but if the gas contains hydrogen sulfide or sulfur compounds which may injure the engines, it may be less expensive to use. In some cases the cost of laying lines for the distribution of fuel gas is great enough to make the use of the liquid fuel advantageous.

Engines now in use can be adapted to the use of propane and butane; but if the greatest economy and performance is to be obtained, engines should be designed specifically for the use of these liquefied gases. It is possible to build this type of engine that will not weigh more than 5 pounds per horsepower output, and have the desirable properties of high mean effective pressure and thermal efficiency.

TABLE 2—OCTANE NUMBER OF PARAFFIN HYDROCARBONS

	Oct. No.	Comp. ratio used
Propane	125	8 15
Isobutane	99	8 09
n-Butane	91	7 35
Isopentane	90	7 35
n-Pentane	64	5 32

TABLE 3—CALCULATED PRESSURE VOLUME RELATIONSHIPS

***Basis:* 1 cubic foot of gas-saturated oil at 149° F. and 2575 pounds per square inch absolute**

Constituent:	Weight per cent	Pounds	Cu. ft. @ 14.7 lbs. per sq. in. and 60°F.
$C H_4$	5 19	2 346	55 57
C_2H_6	4 40	1 989	25 13
C_3H_8	1 71	.773	6 66
C_4H_{10}	2 15	.976	6 35
C_5H_{12}	1 98	.895	.022
C_6H_{14}	3 04	1 374	.032
Residue	81 34	36 852	7031

TABLE 4—VOLUME OF GAS FROM SAMPLE AT VARIOUS PRESSURES

Pressure		Cu. ft. of volume occupied by—		
Atmospheres	Lbs. per sq. in. abs.	Total gas	90% of total gas	Total gas less butane and 23% of propane
1	14 7	90 5	81 4	86 0
90	1,323	1 1	1 0	1 009
95 3	1,400	1 0932	984	1 0
98	1,440	1 0	9	.989
136	2,000	.7098	6388	.7004
171 6	2,575	.5118	4606	.5003

There are, of course, other uses to which liquid propane and butane gases may be put. In one instance repressuring with liquid propane and butane was tried. It was believed that the work of liquefication and introduction into the formation, where earth temperatures would cause vaporization, would be appreciably less than the work of compressing gas and forcing it into the formation. However, as propane and butane remain liquid at high temperatures if held under sufficient pressure, it is doubtful if there is any advantage to be gained in the use of these compounds where reservoir pressures are high.

Consideration of these facts suggests that in repressuring or pressure maintenance projects propane and butane be utilized as fuel and ethane and methane be returned to the reservoir. If the butane and propane are used as fuel and the methane and ethane are returned to the reservoir, it is possible to maintain a given pressure with less gas, or with an equal quantity of gas a higher pressure can be achieved. The following calculation has been made as an example:

Assuming that the gas extracted from this oil contains all of the methane, ethane, propane, and one-half of the butane, the thermal value of this quantity of gas for fuel purposes would be 122,800 B.t.u. At reservoir conditions of temperature and pressure (2,575 lbs. per sq. in. abs. and 149° F.) the volume of this gas would be 0.5118 cubic foot. If one-tenth of this gas (12,280 B.t.u.) is used as fuel, the result will be a reduction in the volume occupied to 0.4606 cubic foot. Had all the butane and 23 per cent of the propane been extracted for use as fuel (12,280 B.t.u.), the resulting volume would have been 0.5003 cubic foot. Calculations can be made to show the pressure exerted by the respective quantities of gas volumes when expanded to 1 cubic foot. This is shown in Table 4 and illustrated by Figure 2.

Liquefied gases also might be used where the production of gas is insufficient to provide fuel for operation of the lease. In this case, liquefied gas might be purchased and used either alone or in conjunction with whatever gas is produced and available for use.

Another possible use for liquefied gas might be as a fuel for the production of electric power, either for oil field operation or for domestic consumption, since engines can be designed to use it efficiently, the electric power thereby being produced cheaply. Recently, propane has been used to replace acetylene in cutting metals with an oxygen torch. A considerable saving can be accomplished in this manner if there is sufficient amount of cutting to be done.

These liquids, because of low viscosity, reduce friction in the transportation of oil through pipe lines, although the necessary separation at the pipe line terminal may make this practice uneconomical. Liquid butane may be used as a solvent, particularly for the removal of paraffin. However, if the liquid is allowed to vaporize, the temperature may be reduced and the paraffin precipitated. In some cases butane has been used with crude oil for dissolving paraffin.

Conclusions

In the writer's opinion, the internal combustion engine offers the greatest potential outlet for liquefied gases. This high-octane fuel can best be used in high-compression engines. This fuel insures thorough vaporization without undue heating. It is possible that the use of these materials to supplement the present inadequate gas supply might enable certain stripper wells to continue operations beyond the present economic limit.

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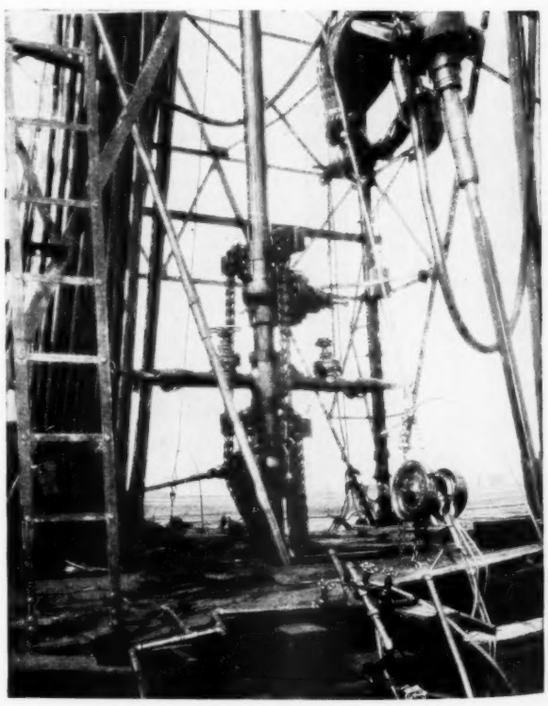

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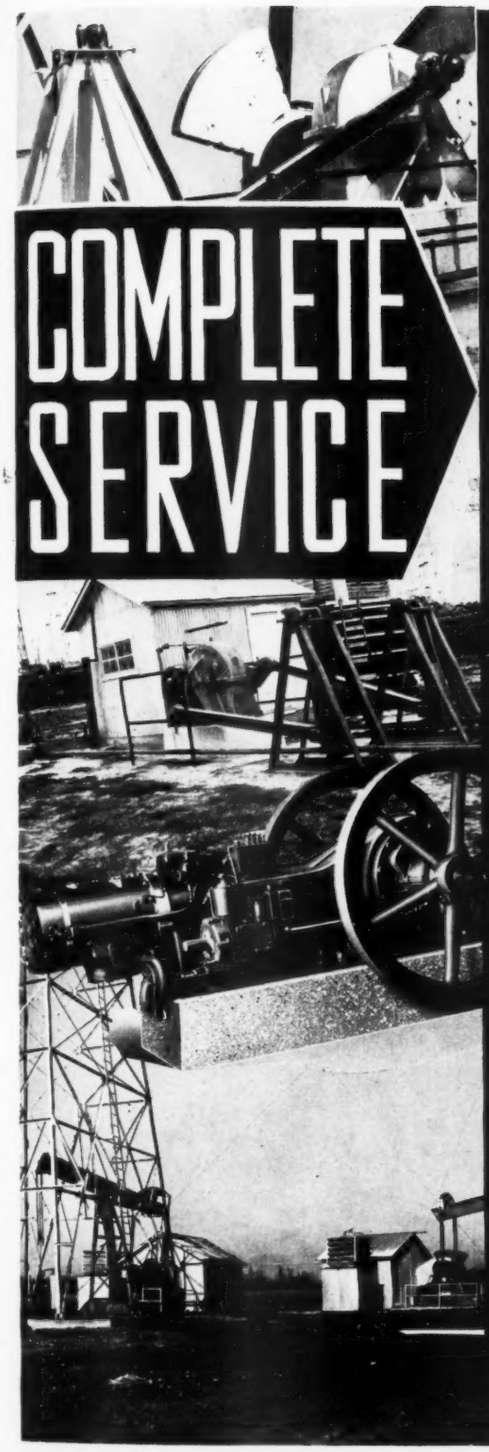

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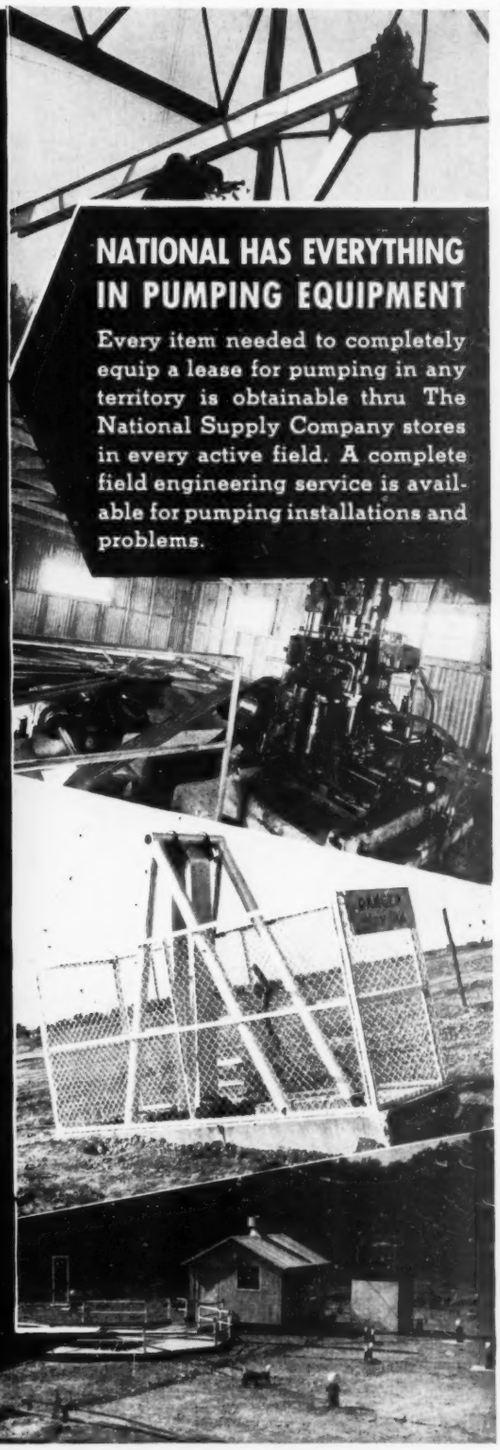

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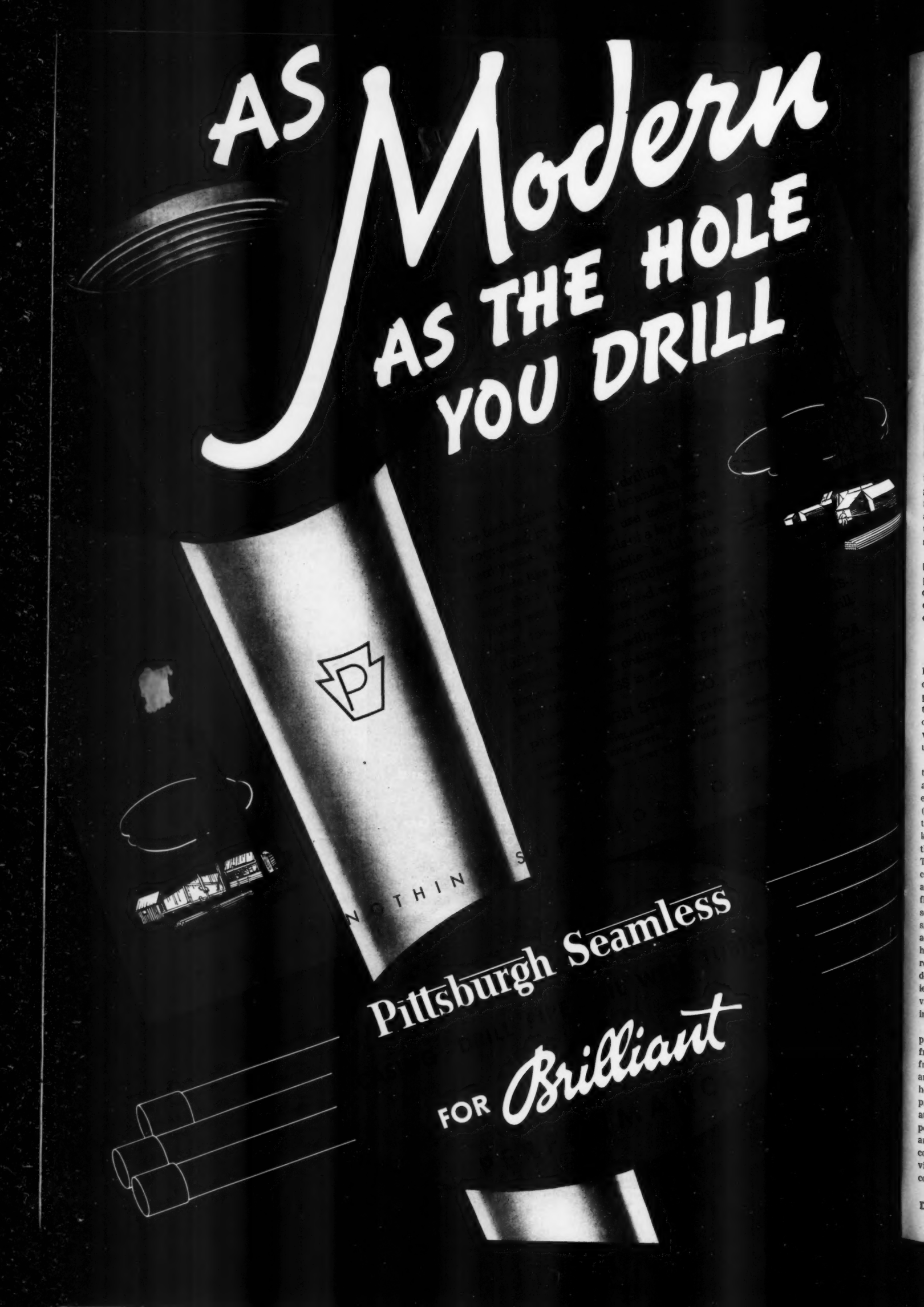
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Application of Automatic Control in Oil Refining

By DONALD J. BERGMAN
Engineer, Universal Oil Products Co.

The cracking process was in an advanced stage of development before satisfactory automatic control equipment was available. Consequently, as suitable controls were developed, they were applied to replace hand control and to simplify the problems of operation.

The two points to which automatic control was first successfully applied were the discharge of gas and distillate from the product receiver. In many cases this released a man for other duties, and besides the direct saving in operating cost, there was an improvement in results due to smoother operation.

From this beginning, automatic control has been extended until it now covers almost every important point in the cracking unit. Without this development, the high quality and yield of gasoline, quality of fuel oil, and length of runs which are commonplace today would be impossible.

Flow Sheet of a Modern Cracking Unit

Figure 1 is a simplified flow sheet of a typical Dubbs selective cracking unit, showing the principal points where automatic control may be applied to modern cracking operation without attempting to cover the large number of auxiliary operations, such as absorption, stabilization, etc., which can be directly connected to the cracking unit.

The raw oil charge is pumped from storage through a flow meter (12) by means of a direct-acting steam pump equipped with a pressure governor, or by a centrifugal pump. A level controller (1) in the lower or reservoir section of the fractionating column governs the rate of charge to keep an oil level and provide a suction head for the heavy hot oil pump.

The raw oil enters the column some distance above the reservoir and flows downward over a series of perforated side-to-side pans. These act as a direct contact heat exchanger and a rough fractionator, condensing out the heaviest portion of the rising vapors while preheating the charge.

The heavy hot oil pump takes suction from the bottom of the fractionating column and charges to the heavy oil heater at a pressure and temperature of about 600 pounds per square inch and 700° F. The flow controllers (2) are provided in order to keep constant flow through each coil in the heater. The light hot oil pump takes suction from the reservoir midway up the fractionating column, and charges to the light oil heater at a pressure and temperature of about 800 pounds per square inch and 575° F. Under good operating conditions there is always an excess of oil flowing downward past this reservoir and overflowing to the bubble trays below. However, under certain conditions, particularly when starting up the unit, a shortage may occur. A level indicator (9) is provided to flash various colored lights in the control room, indicating a change in level to the operator.

A.S.M.E. — Part of paper presented before Process Industries Division meeting in New York, Dec. 6 to 10.

The oil, heated to approximately 930° F. in the heavy oil heater and 985° F. in the light oil heater, is transferred to the top of the reaction chamber and flows downward through it under a pressure of 275 pounds per square inch. The products of the cracking reaction, namely, gas, gasoline, recycle stock and residuum, are withdrawn from the bottom at a temperature of approximately 890° F.

In order to keep a constant pressure on the reaction chamber, back pressure controller (3) is provided which releases all the oil and vapors into the lower section of the flash chamber at a pressure of 75 pounds.

In the flash chamber, a separation of vapors and residuum or fuel oil takes place. The gravity of the residuum is controlled by the amount of cooling oil returned from the stabilizer to the chamber drawoff line and top of flash chamber. The excess cooling oil is returned to the fractionating column above the reservoir through back pressure controller (8).

The vapor stream from the top of the flash chamber passes to the lower portion of the fractionating column and upward through the side-to-side pans, exchanging heat with the raw charge and partially condensing. Above the pans the vapors pass through bubble trays, through the vapor chimney in the light oil reservoir and through the upper trays, undergoing fractionation until the vapor leaving the top tray is a raw gasoline.

In order to maintain a constant endpoint on the gasoline stream (indicated by laboratory control distillation), temperature controller (4) is provided, which regulates the gasoline returned as reflux from the receiver to the top of the tower.

The gas and vaporized gasoline and reflux at a temperature of about 375° F., pass through the condenser to the receiver.

The gas production is measured by a flow meter (11) before being released through a valve operated by the back pressure controller (5). This maintains the pressure on the system from the flash chamber at approximately 75 pounds per square inch.

The raw gasoline product is pumped as made to a stabilizer through a valve operated by level controller (6). In the stabilizer (not shown) a further fractionation takes place, removing the undesirable light ends.

As an aid to the fireman, balanced pressure valves (10) are provided to maintain a constant pressure on the fuel gas header at the burners.

As mentioned previously, the first two points to which automatic control was applied were the receiver pressure and level, shown as numbers (5) and (6) in the flow diagram. The application of a simple air pilot-operated pressure control to the release of gas from the receiver gave very satisfactory and accurate results. This control had a narrow throttling range (proportional narrow band type as classified by Haigler in a recent paper).

An on-and-off control

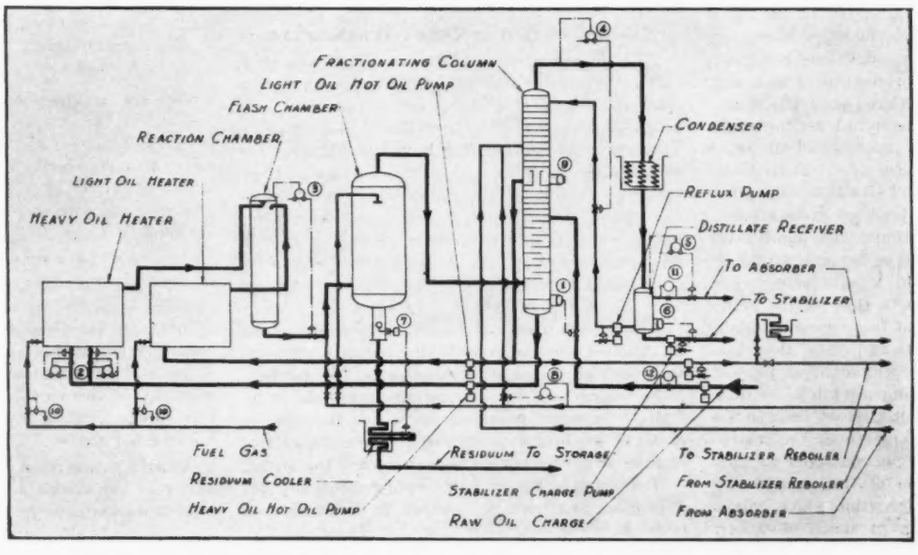

Fig. 1—Simplified flow sheet of Dubbs selective cracking unit showing controls

might maintain a uniform pressure, but the surges in gas flow carried back through the condenser to the tower would result in a variable top tower temperature. Restricting the line between tower and receiver would minimize these variations but would give an undesirable pressure drop. Variations in flow would also prevent accurate reading of the flow meter on the gas, and this is important as an indication to the operator that his plant is running properly.

Level Control on Distillate Receiver

Control of the liquid level in the receiver was easily solved with a float-operated valve (6). Valve stem and float chamber stuffing boxes had to be kept tight to prevent leakage of gasoline. This caused some sticking and variable flow, but did

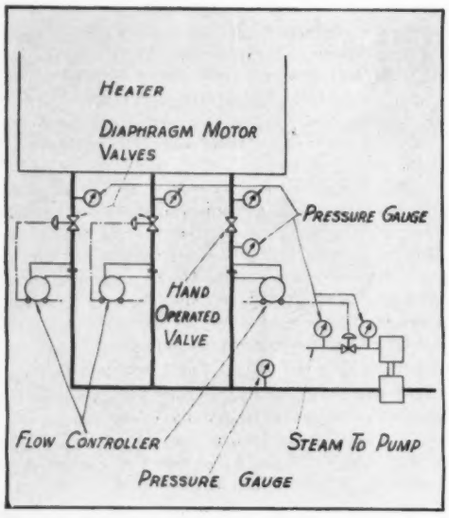

Fig. 2—Control of three parallel flows from power pump

not adversely affect the operation as long as the distillate was released direct to storage. However, progress in the oil industry resulted in the addition of stabilizers to cracking plants to prevent the losses which had previously occurred during the storage of "wild" distillate. This made desirable a more uniform flow than could be obtained with the simple float controlled valve.

In some instances, flow controls were installed to hold a constant rate of withdrawal from the distillate receiver corresponding to the average rate of production. This requires supervision by the operator who changes the rate of flow if the liquid level in the receiver shows a tendency to get out of bounds. When operating conditions are maintained smooth, the rate of production is so nearly uniform that the flow control requires little attention. A flow control modified by a level controller would give the smooth flow desired and eliminate watching the level in the receiver. This would tend to complicate the control situation and add to the plant cost, but might be justified in some cases.

When averaging (proportional wide band) level controls of the instrument type became available, they were applied and did a satisfactory job, maintaining a damped smooth flow to the stabilizer by utilizing a portion of the reservoir height to compensate for variations in rate of flow into the receiver. With later development of proportional wide band or averaging air pilots on float controls, these also gave a satisfactory flow to the stabilizer. They had advantages over the instrument, or differential gauge type controller for this application. This is because of the troubles inherent in measuring a differential which might change due to vaporization, presence of water, leakage, etc., even though the rate of inflow and level had not changed.

A receiver tank with 4 to 10 minutes' storage time at normal flow furnishes sufficient capacity to damp out ordinary changes in flow with variations in level within the operating range of these float controllers.

Control of Flow to Heaters

One of the most important points in smooth operation of a cracking unit is the maintenance of a uniform flow of oil at constant temperature from the heaters. With a centrifugal charging pump, uniform flow is easily obtained by providing one or more flow controllers, operating diaphragm motor valves in each stream through the heater.

With engine-driven reciprocating hot oil pumps one flow controller can be set to operate a valve in the steam line to the engine. This works only in the case of engines with hand adjustable cutoff. A variable cutoff governor on the engine would change the cutoff in an endeavor to keep the speed constant when the flow controller changed the steam throttle valve.

Application of the flow control directly to the cutoff governor has been made which gives maximum steam economy, but results in a rather expensive tailor-made control, requiring considerable engineering and cooperation between engine and instrument manufacturers.

With the steam throttle control there is an opportunity for the operator to become careless and set the cutoff too long, since this requires minimum attention to the engine. The proper method is to set the cutoff to such a point that the control valve in the steam line has the minimum satisfactory working differential. Poor steam economy results from too long a cutoff and low steam chest pressure.

The diaphragm motor valves used to control the streams to the heater are necessarily of sturdy construction since temperatures and pressures around 750° F. and 1,000 pounds per square inch are quite common.

Special consideration to details, such as chromium alloys in body and trim to resist corrosion, cooling fins on the bonnet, and lubrication of stem packing have contributed to success. Depending somewhat upon the pressure drop through the heater tubes, these valves are usually sized to give a differential of 25 to 50 pounds for normal flow and control conditions. If the differential is too low, variations in temperature in the heater, coking in the tubes, etc., will interfere with control, while a differential greater than necessary will result in an undesirable power loss due to the large quantities handled.

Control of Heater Outlet Temperature

With constant flow of oil through the heaters and a gas fuel system maintained at constant pressure, hand control of the fires by means of the balanced pressure valve is ordinarily satisfactory. This valve has no stuffing box, and balances the reduced gas pressure against an air pressure fixed by a pilot reducing valve and leak. The pilot is located on the instrument panel in the receiver house, close to the pyrometer recording the oil temperature leaving the heater. This gives a remote manual control on the heater outlet temperature.

The outlet temperature of the heater may be maintained automatically by the use of a temperature controller operating a valve in the gas line. It has sometimes been found advantageous to install the control point ahead of the transfer or outlet of the heater, particularly where the rate of change of temperature falls off toward the outlet.

Referring to Figure 2, the temperature at point A is more sensitive to changes in firing than at point B, so a controller working from point A would give a uniform temperature at B, even though there were slight fluctuations at A.

When the heater has a "straight line" temperature curve, as shown in Figure 3, the outlet temperature is more sensitive to changes in firing and the use of the anticipation point has less value. However, if the outlet of the heater is subject to coking, a couple located earlier in the flow will maintain a more accurate indication over long runs, and hence the anticipation point may be desirable even at the expense of some sensitivity to firing rates.

If changes in flow occur in a heater with a straight heating curve, the anticipation point will detect a change in temperature and indicate the need of a change in firing before the transfer temperature is affected.

Satisfactory automatic control of a heater must

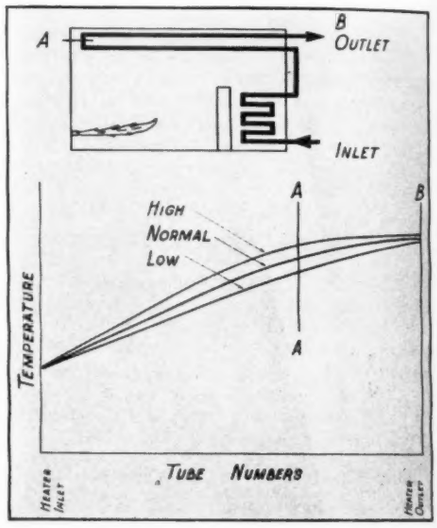

Fig. 3—Effect of changes in firing on heating curve drooping at outlet, or soaking curve

take into account the large number of independent variables which affect the outlet temperature. These may be listed as follows:

1. Rate of charge to heater.
2. Temperature of charge to heater.
3. Quality of charge to heater.
4. Outlet pressure.
5. Vapor generation in heater tubes.
6. Cracking in heater tubes.
7. Coking of heater tubes.
8. Pressure in fuel lines.
9. Calorific value of fuel.
10. Atmospheric conditions.

The speed of changes in these variables and the time before a change affects the outlet temperature can range widely. In a cracking heater provided with flow control as covered previously, the first seven listed are ordinarily quite stable and changes occur slowly. Of course, an operator may make adjustments at infrequent intervals to Nos. 1 and 4 which will be abrupt, but time is then given for the system to reach equilibrium.

On the other hand, changes in heating value of fuel, or atmospheric conditions, may result in violent and continuous changes in the duty of a controller operating on the gas to the burners. In general, the problem is usually solved by fixing as many of the variables as possible under their own independent controls, especially Nos. 1, 4 and 8 in the list above.

Consideration must be given to heat storage capacity in brickwork and also in the oil, in order to obtain satisfactory control. Heat storage capacity on both heating and receiving sides is low in comparison with many other operations, hence a sensitive control with adjustable throttling range

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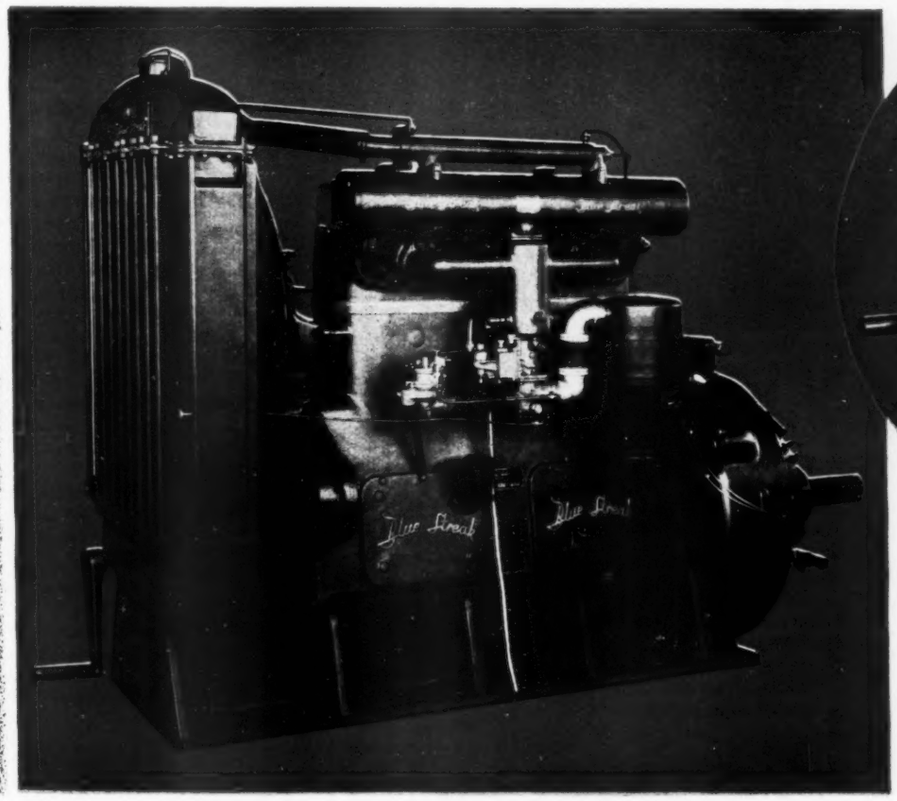
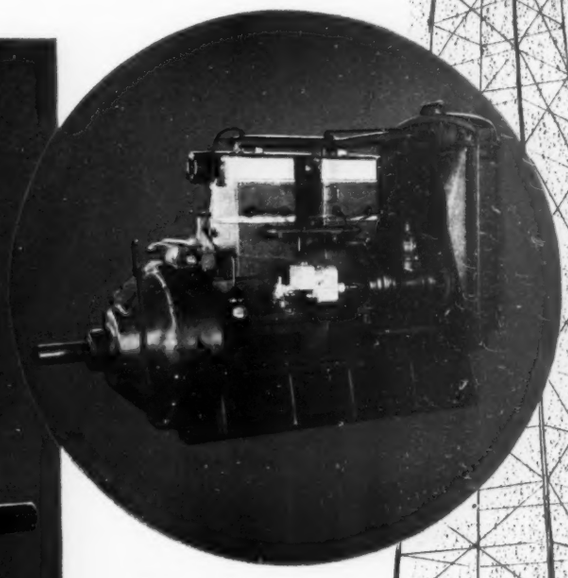
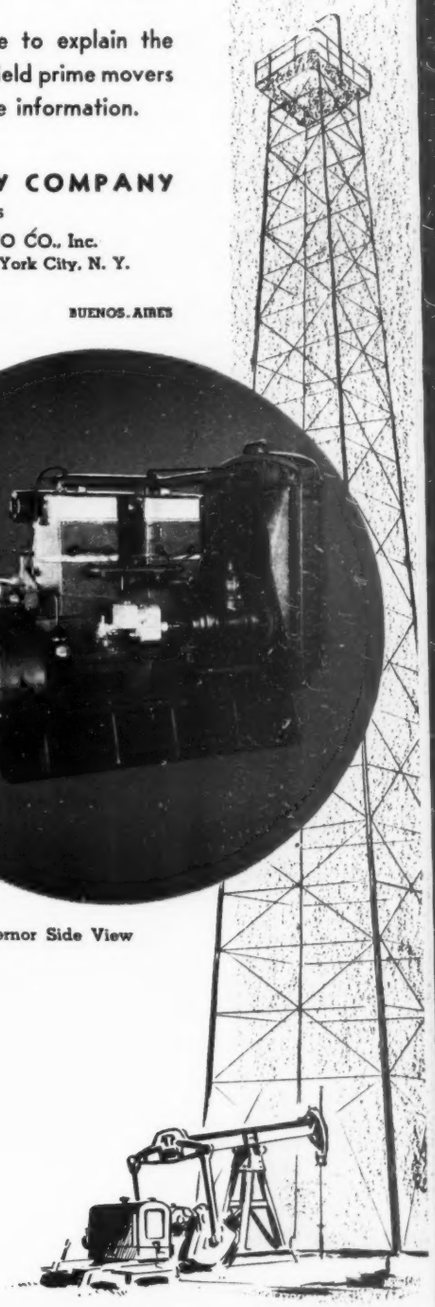


Climax Blue Streak Model N4B Engine
Manifold Side View



Governor Side View



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(proportional band) and speed of reset is necessary.

Reaction Chamber Pressure

To control pressure in the reaction chamber with a back pressure valve, the outstanding considerations are the large storage capacity back of the valve, desirability of uniform flow, and the severe conditions of temperature and pressure. A pilot type controller of the adjustable proportional wide band type is desirable in order to set the throttling range so that the control point will not wander, and still will give a smooth flow in spite of changes in temperature or quantity of oil from the heaters.

The pressure tap must be made at a point where it will not coke up and give false or sluggish indications.

The diaphragm control valve must be good for temperatures up to 925° F. and pressure up to 475 pounds with a 400-pound differential. Corrosion and erosion of the valve has been a problem but this has been greatly reduced by streamlining the inner valve body and use of special chromium alloy trim.

A hand lever may be provided for working the valve when coked up or bound by the packing. This enables the operator to flush the valve if particles of coke or ganister lining get caught in it. Cooling fins on the valve bonnet and frequent lubrication greatly reduce the possibilities of sticking the valve stem in the packing.

Level Control in Flash Chamber

Another important control point for smooth and continuous operation of a cracking unit is the level at the bottom of the flash chamber. A high level at this point will result in coking in the chamber and a high percentage of sediment in the residue, while too low a level means that light material is withdrawn, reducing the yield of gasoline, and at the same time spoiling the flash point of the residuum.

Both internal and external float controls have been used in this service. On account of the high temperature it is desirable to provide a cooling oil connection at the float stuffing box to keep it from coking up. Locating the control valve between the flash chamber and the cooler often results in coking and sticking due to the high temperature. Placing it after the cooler also gives difficulty because viscous residuum makes the stem sticky and valve motion sluggish. Accordingly, a location part way down the cooling coil at a flowing temperature of about 400° F. often gives much better satisfaction.

The controller should have proportional wide band characteristics in order that the flow remain relatively smooth. Wide changes in the valve setting which might occur with a proportional narrow band controller would result in withdrawal of vapors, as the liquid storage in the bottom of the chamber is intentionally minimized by means of an extension neck to prevent coking.

Control of Residuum Gravity

The cooling oil used for regulating the quality of the residuum from the flash chamber is injected into the reaction chamber drawoff, and sprayed into the top of the flash chamber. This is ordinarily under hand control. Automatic flow control has been advantageously used at this point in order to provide closer regulation.

The back pressure valve has as its main function the disposal of excess cooling oil from the stabilizer reboiler by returning it to the fractionating column. By keeping constant pressure on the cooling oil header it also keeps a steady flow of cooling oil either under hand control or automatic flow control to the flash chamber inlet and top. This is a pilot control of the proportional narrow band type as there is no capacity in the line to take up variations.

The level control in the base of the column is preferably of the proportional wide band type to minimize surging. The response of level to variations in flow is rather slow since the oil is introduced above a series of perforated pans. Furthermore, the change in level is amplified in comparison to the change in flow of raw oil, due to the condensation of vapor.

Reset mechanism is not necessary, or even desirable in this control, as bringing the level back to a normal overcorrects the flow and acts opposite to the damping effect of an averaging control.

The raw charge to the unit may also be handled by a flow control in the raw oil line instead of the level controller shown in the flow diagram. In this case, variations of liquid level in the fractionating column reservoir must be compensated by manual adjustment of the controller. Under normal operating conditions, the capacity of the plant fixes the feed rate. A continued rise in level indicates the necessity of adjusting operating conditions to maintain the capacity in preference to the alternative of decreasing the flow rate.

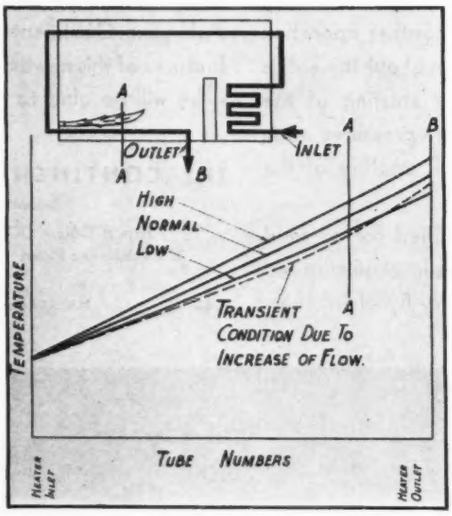


Fig. 4—Effect of changes in firing on straight-line heating curve

The alternate methods offered for this control represent two opposing philosophies. In the first method the control adjusts the feed independently of the operator. A decrease in feed rate shown by the flow meter, will necessitate a search for the cause in order to correct it and maintain the capacity. In the second method, the raw oil capacity is fixed by the flow control, and a continuous rise in the level at the bottom of the fractionating column will again send the operator searching for the cause in order to correct it without changing the charging rate. With efficient operators the two methods give substantially equal results. The lax operator can ride along with the first scheme at reduced capacity where he would be in trouble with an upset plant in the second case.

Control of Gasoline Endpoint

Early attempts at automatic control of tower temperature encountered many difficulties because of the limitations of the controllers available at that time.

Most of them worked on a comparatively narrow throttling range (proportional narrow band). This resulted in setting up hunting cycles in the tower. First, the temperature changed. After a time lag the instrument observed the change. After another time lag, the instrument began to change the reflux rate to the top of the column. Another time lag and the temperature in the top of the tower felt the effect of the change in reflux. In the meantime the instrument had overdone the change in reflux, and the cycling or surging was on its way.

Pyrometer controllers with electrical relay systems and motor-control valves were tried, since the control was simply an addition to the pyrometer already in use. At first a single motor shifting a control valve between a high and a low point was used. This resulted in severe hunting and was definitely unsatisfactory. Two motor controls, having three contact points, high, neutral and low, gave somewhat better results, since they could be set with the second motor to shift the neutral point to correspond with a change of load. These controllers were highly expensive and later installations were provided with thermometer bulb systems with air-operated relays which were developed for the purpose.

The modern instruments with adjustable throttling range and reset speed (proportional reset type) have shown considerable advantage in coping with the many variables which can affect this important point. As an illustration, the operation of this controller may be affected by changes in:

1. Quantity or temperature of raw oil fed into the lower part of the column acting as a heat exchanger.
2. Hot oil pump speed changing quantity of vapors to tower.
3. Heater outlet temperature.
4. Quantity of cooling oil to flash chamber.
5. Rate of reboiler heating medium drawoff, and temperature of returned oil.
6. Quantity or quality of absorption oil returned to tower.
7. Quantity or temperature of condenser water.
8. Receiver pressure.
9. Gas production due to changes in cracking conditions.

Many changes result in compound effects. For example, an increase of cooling oil returned to the tower reduces the amount of heat in the vapors to the top of the tower and the condenser, and reduces the amount of reflux necessary to maintain a given top temperature. At the same time, if the vapor line be small and the condenser have a high pressure drop, the pressure at the top of the fractionating column will be reduced, and a heavier or higher endpoint material will be in vapor-liquid equilibrium for the given top temperature, requiring a change in the central point to maintain the desired gasoline endpoint. This might not be detected immediately, since laboratory control distillations take some time and are seldom made on an hourly basis. The operator must consequently watch for such pressure changes and make corrections as his judgment dictates until the unit is again under control.

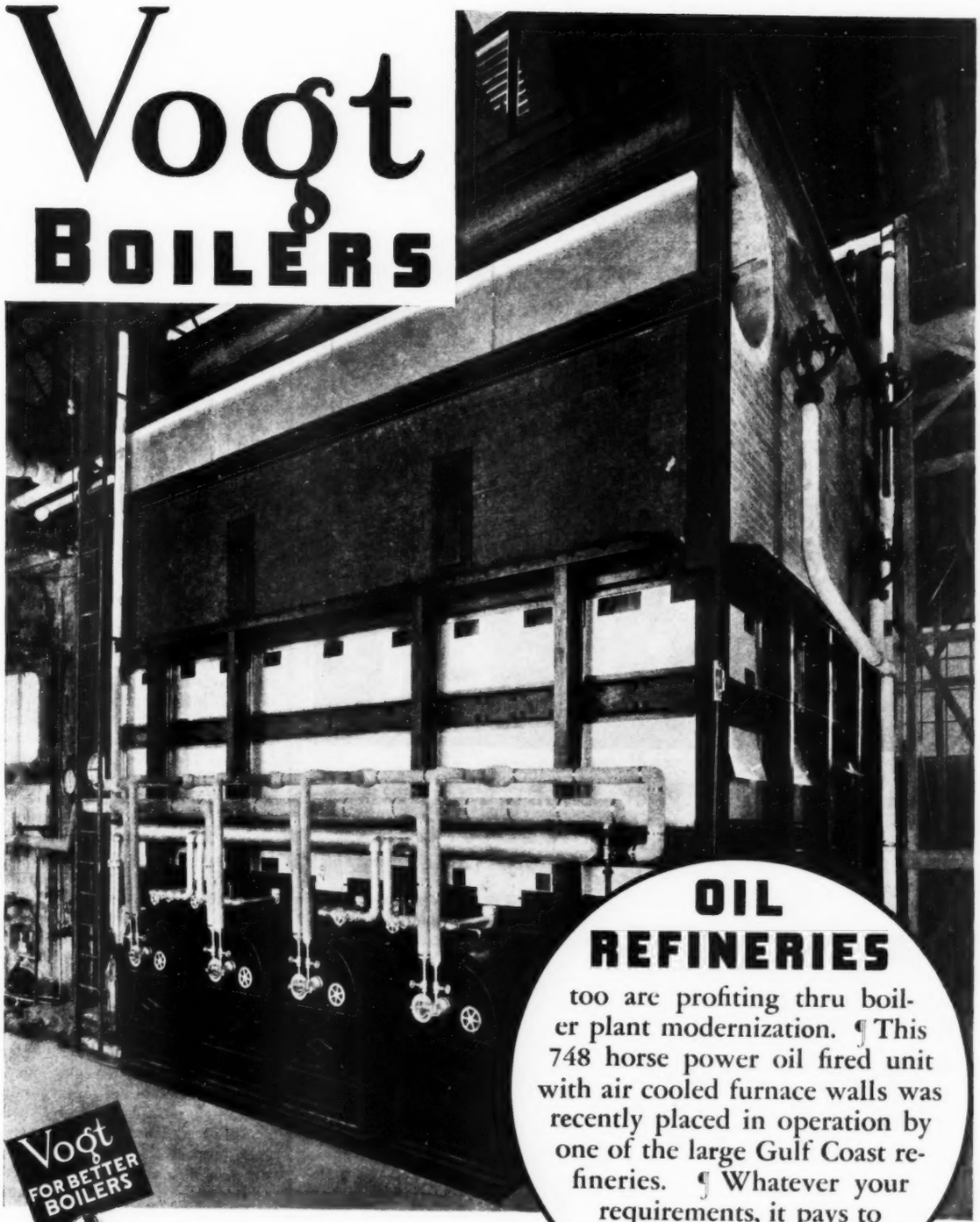
An increase of transfer temperature with constant flow through the heaters would have an immediate effect of carrying more heat over into the fractionating column and would require an increase of reflux at the top of the column. The higher temperature would also have an effect on cracking conditions resulting in an increase of raw oil capacity for a given rate of pumping feed to the heaters.

The increased raw oil feed with a fixed quantity of vapors would result in more condensation at the bottom of the tower and would gradually reduce the reflux over the top of the tower to a value lower than the starting point.

The changes listed may be classified in two types according to the way they effect the top tower temperature control:

(a) Changes which require variations in the quantity of reflux returned to the column and which an automatic control can handle without

Vogt BOILERS



OIL REFINERIES

too are profiting thru boiler plant modernization. ¶ This 748 horse power oil fired unit with air cooled furnace walls was recently placed in operation by one of the large Gulf Coast refineries. ¶ Whatever your requirements, it pays to consult Vogt engineers.

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correction by the operator, such as 1 to 6 inclusive.

(b) Changes which require a revision of the set point to maintain a desired gasoline endpoint, such as 7, 8 and 9.

These latter changes require corrections by the operator, which are indicated by a survey of plant conditions or by control tests. Some of these might be compensated for by the use of interlocking controls, such as provision of an adjustment of the set point of the temperature controller for changes in pressure at the top of the tower. In general, the conditions are so many and possibilities so varied that better success is obtained by holding all possible variables constant by independent controls and training the operator to correct for the remainder rather than attempting to interlock many control points.

Practical Considerations

Some comments on the difficulties of the plant instrument man may be of value here. They are the result of a number of years of continuous experimentation and change.

How far should automatic control be carried?

The differences between the results of good hand operation and automatic control at the same point may be within the limits of experimental error in gauging. However, the quantities handled are so large, and their value so great, that an improvement of a very small fraction of a per cent in yield or capacity will pay handsome dividends on the investment for satisfactory automatic control.

It is well to understand that the majority of oil refinery processes can be hand-controlled and will be if the means of automatic control fail to give smooth, uniform operating conditions.

Failure of a controller at a vital spot, even for only a moment, may result in a costly shut down of a plant, requiring two or three days for cleaning and bringing back on stream.

A series of failures of a given control will seriously prejudice an operator against it as having betrayed his trust.

In some plants there has actually been an inclination to minimize the amount of automatic control equipment, on the ground that the operator may too completely trust the controls and become careless. Operators will often attempt to adjust a control rather than seek out the cause of a disturbance, with the result that the plant may be upset for some time and the instrument man has a complete job of readjusting on his next shift.

Ability to make adjustments to an instrument without taking it out of service is a major advantage, as many refining processes may run for months without a shutdown, and serious upsets may occur if an instrument goes "off control" when being adjusted.

In general, automatic control for the oil industry must be rugged, protected against corrosion of several varieties and readily understandable and adjustable by plant instrument men.

There is a real advantage in the use of temperature controls of the pyrometer indicating or recording type with a good air system for control, particularly for remote foreign service. Failure of a thermometer bulb system requires the return of the instrument to the factory and it may be three or four months before it can be repaired and again placed in service. On the other hand, the pyrometer and air-control system can be kept in condition by the local instrument man.

Many of the difficulties encountered in the field are annoying little mechanical defects which proper planning and inspection by both instrument manufacturer and the refiner could eliminate.

A frequent cause of difficulties with automatic control is failure on the part of the refinery to provide clean, dry air. Oil or water vapor carried along from the compressor may clog delicate parts or leakages, and worse still may freeze in cold weather. Usually little attention is paid to this matter until major difficulties force consideration. Provision of air receivers outside the control house and housing controllers with steam coils will improve conditions. A suggestion is the installation of small tanks for saturating the air with alcohol to prevent freezing.

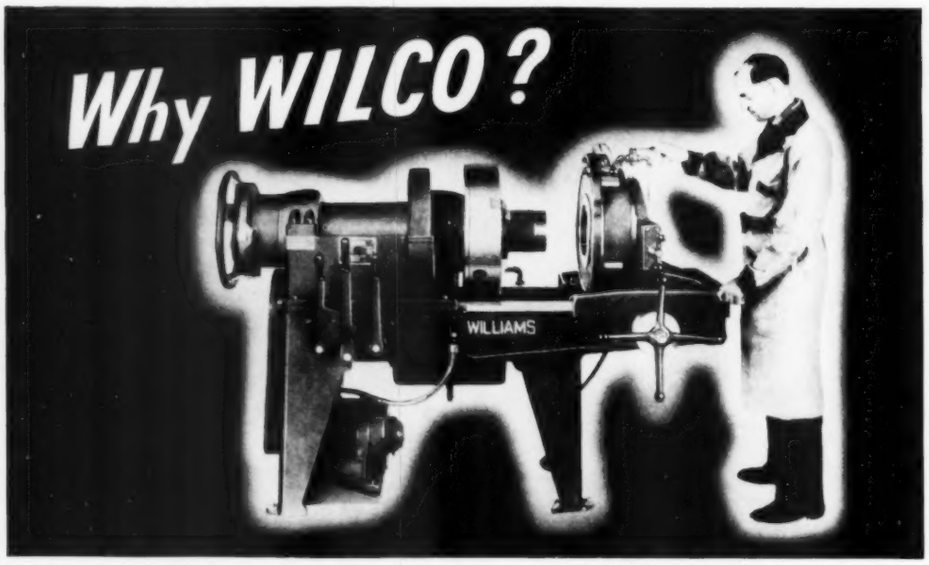
Sizing of control valves is often difficult because variations in charging stocks or operating conditions to obtain different products often make great changes in rates. Hence, wide rangeability is desirable. Sometimes a single valve will not work properly over the range required and two valves of different sizes are placed in by-passes, to be used according to the load.

Location of Control Points

The location of control points should be carefully chosen, as indicated previously in the discussion of control of heater outlet temperature.

As an illustration: In the measurement of heater outlet temperature, a thermocouple installed in a special outlet tube header fitting may show a difference of as much as 10° F. from a couple located in a boss on the side of the outlet line a foot or two away. At the same time, the first couple will detect changes more quickly because of greater depth of immersion and less radiation.

Temperature indicating points, whether of the pyrometer or thermometer type, should be placed in a location of high velocity to take advantage of



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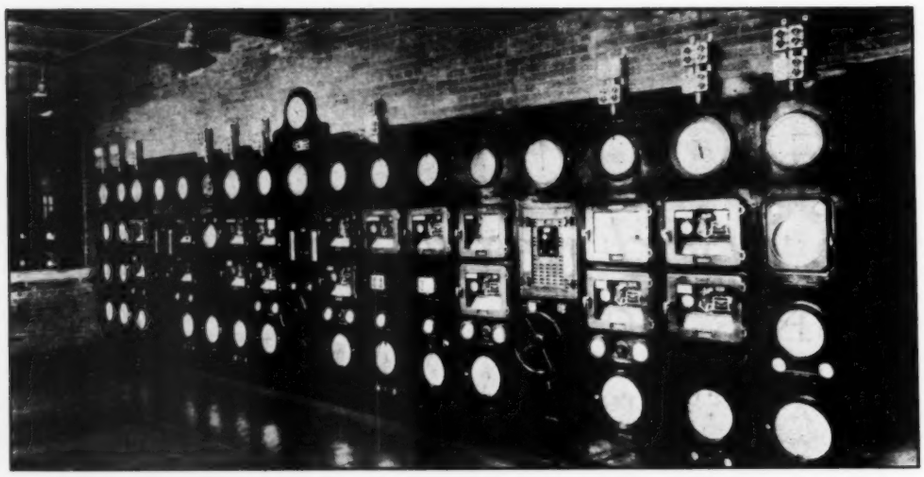

Control panel showing recording, indicating and controlling instruments

increased transfer rates, and reduction of the time necessary to show a change.

Thermometer wells should be of minimum thickness for the same reason, and where chromium alloys are used for corrosion protection it should be remembered that their heat conductivity may be only half that of steel.

Pressure taps should be taken from locations where velocity is low, to eliminate the effect of velocity head. Liquid level controls likewise will be affected if one or both taps are located on lines through which flow occurs. The friction drop through a nozzle and short length of pipe may easily equal a greater head than the range of the controller. Consideration of process time lags will sometimes dictate the location of control points in order to obtain maximum speed of response to changes at the expense of sensitivity or accuracy.

There is a tendency in some quarters to consider self-actuated devices, such as float operated lever valves, spring loaded pressure governors and reducing valves, self-acting temperature controls, etc., outside the field of control instruments.

Although these are unsatisfactory for many services, they have a definite place in the refinery picture within their limitations, as they are usually rugged and require a minimum of adjustment and servicing. Where they are used in conjunction with other more sensitive types their characteristics must be carefully considered with regard to the possibilities of intereference with other parts of the control system.

As mentioned earlier, automatic control has been gradually evolved from hand control on a large majority of refinery processes. However, more and more the modern refinery is becoming a chemical plant with new processes and their attendant control problems being continually added.

The development of new methods for solvent extraction, polymerization, treating, alcohol production and other chemical processes often requires new control equipment or the improvement of equipment now available. Continuous recorders and controllers for vapor pressure, viscosity, acidity, color and other properties could be worked into many of the new plants with an improvement in quality or yield of products.

Many of these new processes are evolved from laboratory research, and the control system must be completely planned out in advance of commercial operation. The process must be considered as a series of unit operations and the necessary controls arranged on the basis of experience in similar situations, with special consideration for the interaction or interference of controls between different sections.

It is very important that the proper instruments be selected in the first place because, once installed, there is a strong tendency to "get along with it" unless it is absolutely hopeless. So "almost satisfactory" results are often tolerated for long periods at a sacrifice of yield and quality.

To aid the engineer in making the right selection, an improved system of classification of control equipment and its limitations, as well as the criteria and quantitative methods for selecting the proper type of control from fundamental data in the process, is highly desirable. This would make control problems easier of solution by definite rules rather than by expensive cut and try methods.

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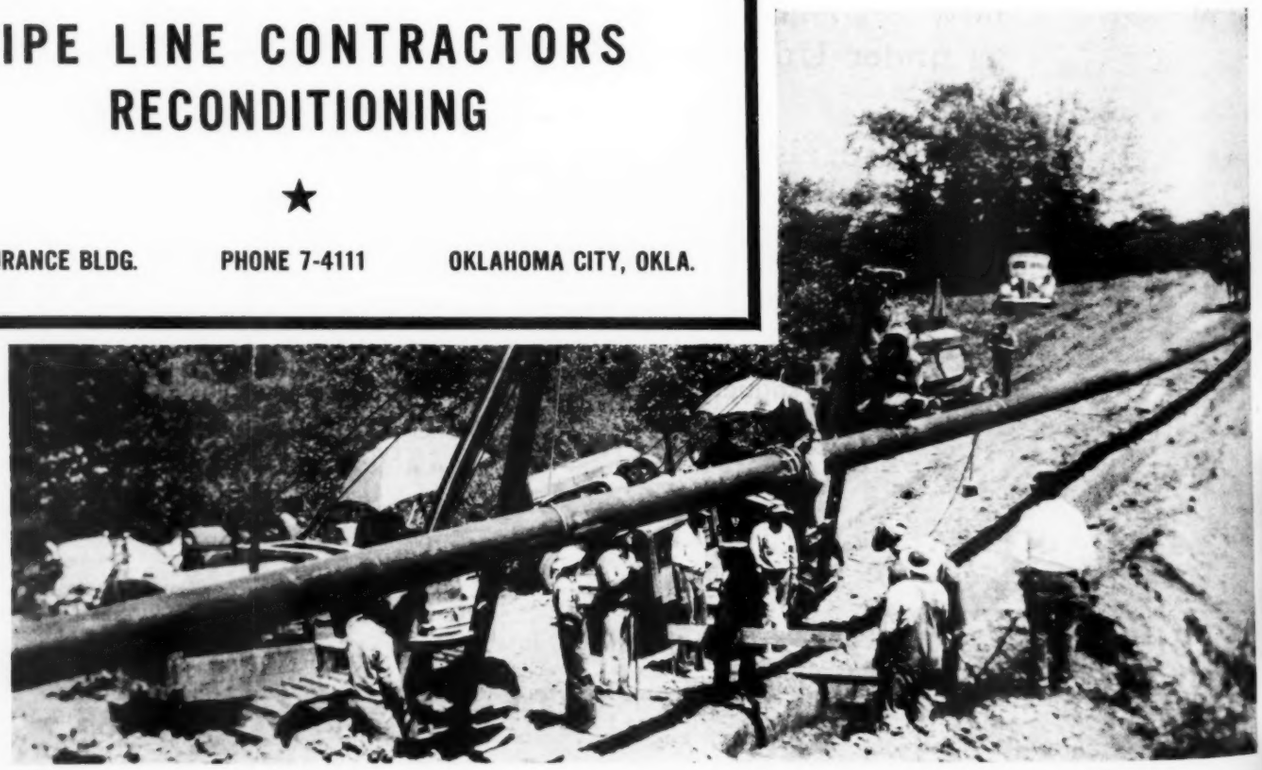
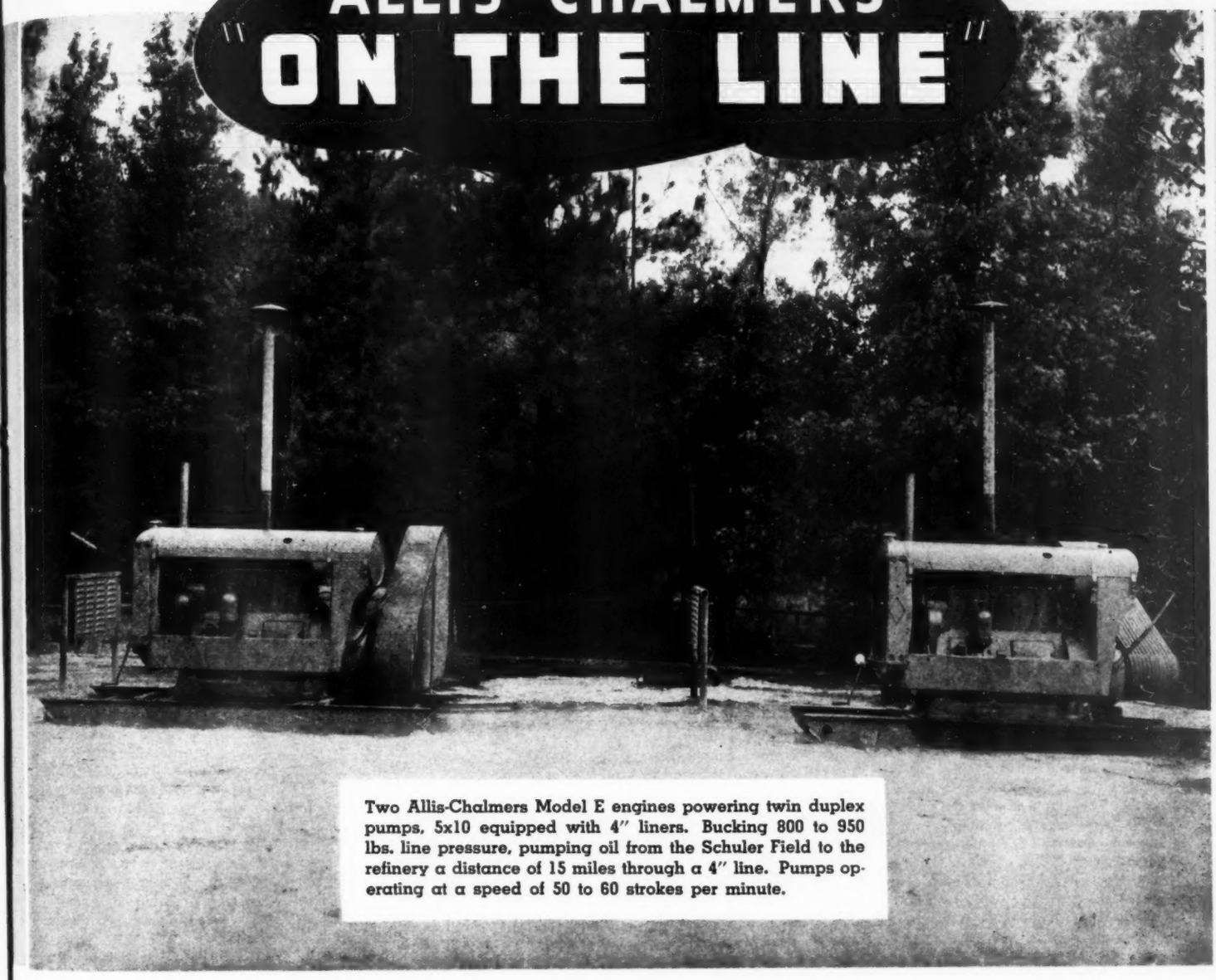


ALLIS-CHALMERS "ON THE LINE"



Two Allis-Chalmers Model E engines powering twin duplex pumps, 5x10 equipped with 4" liners. Bucking 800 to 950 lbs. line pressure, pumping oil from the Schuler Field to the refinery a distance of 15 miles through a 4" line. Pumps operating at a speed of 50 to 60 strokes per minute.

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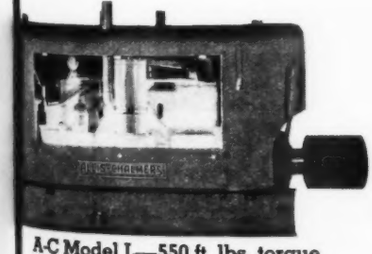
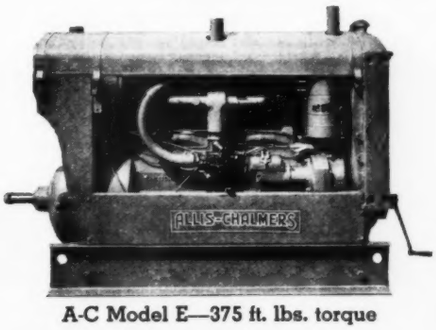
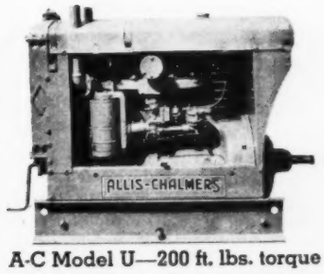
Practically any oil field power application can be made with A-C units, because there is a model from the standpoint of installation, adaptability, operating economy, and size that will do the job. Quick delivery, ease of installation, and universal service makes A-C engines the ideal powers for pumping wells, pipe line pumps, mud pumps, light drilling rigs, compressors, generators, and stand-by powers.



A-C Model L—550 ft. lbs. torque



A-C Model E—375 ft. lbs. torque



A-C Model U—200 ft. lbs. torque

A-C Model W—128 ft. lbs. torque

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Repressuring Old Areas

Have you any available information in regard to the repressuring of oil wells that produced at time of drilling 10 to 50 bbls. and at settled production about 2 bbls.? New wells drilled on same lease will now produce only about 3 bbls. These are shallow wells about 400 feet deep in western Kentucky. If possible to increase production in this way what would be the estimated cost? Possibly there is some other way to increase this production although new wells on the same lease are lacking in flush production which would seem to be the result of a lack of formation pressure. Any information you can give will be greatly appreciated.—E. W. B.

In reply to your letter we refer you to an article by T. P. Sanders on page 41 of the Dec. 17, 1936, issue of The Oil and Gas Journal about secondary recovery methods used in western Kentucky.

There have been numerous articles on water flooding and repressuring published in The Oil and Gas Journal from time to time and if you have access to a file of back numbers you can easily find some of them.

However, if you have a specific problem it is our suggestion you secure the services of a competent petroleum engineer and have him make report upon the best method to be applied to your properties. This would involve the taking of representative cores of the producing formation and having same analysed in a laboratory to determine the sand characteristics.

Such a laboratory report should give you information about the quantity of oil still in place, the porosity and permeability of the formation and other data all of which can be used to determine the best method to be used to secure the largest proportion of the oil now in the reservoir.

It is probably true that wells now completed in the area long produced will not have much higher initial capacity than the older wells in the same area. But this is because formation energy has been dissipated and does not indicate that new and old wells cannot be made to produce more oil and also produce this oil at a higher rate.

We trust this brief review will be of some aid to you but still suggest you consult with an engineer who can make personal examination of your properties.

History of Proration

Where can I obtain a comprehensive history of the development of "Proration" from its inception in the East Texas field (?) right down to the present day. I am also interested in state and federal laws such as the Connally act and the Interstate Oil Compact.—L. S. D.

The question about proration is quite involved. It did not have its inception in East Texas but has been practiced in one form or another ever since the oil industry started. During the earlier periods of the industry what amounted to proration was practiced by the purchasers who raised or decreased the price thereby stimulating or retarding development and production of oil. Later pipe line companies allocated production in fields to conform to their market demands for delivery of oil.

The first proration order made by the Corporation Commission of Oklahoma, under the law, was on June 20, 1914, Order No. 829, and covered regulations in the Cushing field. Another order was issued by the same body on November 26, 1914, No. 878, covering production in Healdton field. There were no prorated fields after the Cushing and Healdton fields until order was made on Seminole field in July, 1927.

Practically all of the general data you ask about can be found in the records of the Congressional Petroleum Investigation hearings known as the Cole Committee. Report of these hearings have been published in four volumes by the United States Government Printing Office. It is understood the supply is exhausted but you may be able to locate copies and if so we suggest you refer to the index in which you will find numerous references to specific statements concerning those details you enumerate in your letter.

We enclose A.I.M.E. Technical Publication No. 778, "Can the Rule of Capture be Rationalized?" by Earl Oliver, Ponca City, Okla., who is recognized as an authority on this subject and if you care to write him asking for specific information he will be glad to answer your inquiry and can furnish you copies of published articles on the various subjects specified.

A copy of the Interstate Compact with by-laws may be secured from Art L. Walker, secretary of the Interstate Oil Compact Commission, State Capitol Building, Oklahoma City, Okla.

To secure copies of the state and federal laws pertaining to the conservation of natural resources it will be necessary to write the secretary of state for each of the oil producing states, but after you secured same it is very doubtful if they would mean much because a committee of three members of the Interstate Oil Compact Commission spent about six months trying to correlate rules and regulations for the production of gas and oil and did not finish the job.

Statement Misquoted

In the summary of the recent A.P.I. annual meetings on pages 98 and 99 of the November 12 issue of The Oil and Gas Journal Dr. Howe is quoted as stating that 3,607,000,000 bbls. of crude would have been required in 1936 instead of 1,742,000,000 bbls. to supply the motor fuel requirements of the United States. It seems to me there is an error in this statement as we did not produce 1,742,000,000 bbls. of crude in this country in 1936.—R. S. L.

We are interested in your comments upon the statement made in the review of the activities of the A.P.I. annual meeting published on pages 98 and 99 of the November 12 issue of The Oil and Gas Journal.

The figures quoted were as given by Dr. Howe in his paper, but instead of the consumption for the United States being 1,742,000,000 bbls. for 1936, Dr. Howe stated:

"It would have required 3,607,000,000 bbls. of crude, in place of 1,742,000,000 bbls. in 1936 alone to have produced throughout the world the same amount of gasoline by straight distillation of the crude—without cracking."

It is hoped the complete article by Dr. Howe will give you the balance of the information you desire.

Gas in Western Kentucky

I will appreciate any information you can give me concerning the following:

The life of gas fields in western Kentucky.

The relation between rock pressure and calibrated capacity of the well.

The average recovery in cubic feet per acre over years of life with respect to thickness of gas sand.—A. G.

For general information about natural gas in western Kentucky you are referred to a report prepared by W. R. Jillson of the Kentucky Geological Survey, Sec. VI, Vol. 38, (1931). It is understood more recent reports have been made by that department and may be secured by writing to Frankfort, Ky.

In a report on the Eastern Interior Coal Basin Alfred H. Bell, Illinois Geological Survey, Urbana, Ill., covers the western Kentucky gas fields in a brief paragraph or two and gives some tables and a map. He also quotes from Jillson's report as follows:

"Initial open-flow capacities of wells in several fields of Illinois and southwestern Indiana and total open-flow capacities for the fields of western Kentucky are given in Table III." This table shows rock pressures varying from 40 to 560 pounds per square inch and open flow capacities from 300,000 to 100,000,000 feet per day. There is no direct relation between rock pressure and the capacity of gas wells. High rock pressure will have a tendency to increase rate of flow but no general rule can be stated without using flow formula and having rather complete data covering many conditions at the well.

The U. S. Bureau of Mines has developed a method for testing gas well capacities without open flow and if you are interested in securing this information it is suggested you write to that department at Bartlesville, Okla.

For Kentucky gas fields including both eastern and western sections of the state it has been estimated the average recovery determined by including areas of oil-producing lands, and, therefore, much smaller than the true recovery per acre from a reservoir unit, is 0.91 million cubic feet per acre, (910,000 feet). A footnote to this table states actual recovery per acre may range from 4 to 10 times those estimates.

Your last question is not clear. The capacity of a gas well is measured at the top of the flow string. To arrive at production per cubic foot per acre it would be necessary to divide production rate by thickness of the producing formation. The characteristics of the producing formation will vary in the individual well and in each field.

Jillson states that in western Kentucky the acre-yield of gas is calculated to range from 2,000,000 to 4,000,000 feet and in isolated instances to 5,000,000 feet. If you know the thickness of the producing formation you can arrive at an average per foot yield if you divide these estimates by the sand thickness.

For further information we again suggest you write the Kentucky State Geological Survey, Frankfort, Ky. It is also understood the Owensboro Chamber of Commerce recently opened an oil and gas department and is prepared to furnish statistics and facts regarding gas and oil production in the vicinity of that city.

"SOMETHING ELSE, TOO! THEY CAN EASILY SALVAGE THE JOINTS ON A DRESSER-COUPLED LINE!"

When a Dresser-coupled line is taken up, all joint parts can be used again except (in some cases) the gaskets and bolts. These can be replaced at about one-fourth the original-joint cost.

Thus, if a Dresser joint cost $2.00 to begin with and is re-used with new gaskets and bolts, the cost *per installation* is only $1.25.

This saving, which many joints cannot offer, is worthy of consideration when determining *ultimate* pipe-joint costs.

Only the gaskets and bolts, the least expensive parts, had to be replaced when reclaiming and relaying this Dresser-coupled line in Kansas.

NOTE TO READER: This is the twentieth in a series of advertisements dramatizing one engineer's experience with his first Dresser-coupled line. For the complete story, write for Bulletin 351.

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MANUFACTURING CO., BRADFORD, PA.
In Canada: Dresser Mfg. Company, Ltd., 60 Front Street, West, Toronto, Ontario

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Kerosene Treating Methods and Grades of Kerosene

What methods are used for the purification of kerosene illuminating oil? How many grades of kerosene are there?—M. McD.

Several chemical methods are in use for the purification of kerosene, the important impurities being, as in all petroleum distillates, color and sulfur. The literature contains much material on the subject, a complete discussion is to be found in the series of articles by Morrell and Egloff in The Oil and Gas Journal. Several of the better known methods are briefly described.

Sulfuric acid or sulfur dioxide may be used in the first step. Sulfuric acid is the more extensively applied. Sulfur dioxide is utilized in the liquid form, the reagent sludge is removed, by settling after agitation with the oil, and the sulfur dioxide recovered. The treated oil is washed with alkali and water.

Sulfuric acid is applied in many degrees of concentration and quantities. The contact is by agitation. The usual practice is to treat with 66° acid at normal temperatures in quantities varying from one-half pound per barrel of oil upward, depending on the percentage and form of sulfur contained in the kerosene and the quality of kerosene desired.

In addition to concentration, the acid may be contacted under variations in temperature, which ranges from cold, about 0° F., to above 100° F. The acid sludge is removed by settling, which is frequently burned but the larger refineries convert the material to sulfuric acid.

The Day process comprises treating the oil at elevated temperatures with hydrochloric acid in the presence of a metal; brass has given satisfactory results. Any acid remaining in the distillate is neutralized and removed by washing with water.

In the Lachman process the oil is vaporized and the heated vapor passed through or in contact with an aqueous solution of zinc chloride. When much sulfur is present as hydrogen sulfide, it is economical to pretreat with water or caustic soda. The vapors, after zinc chloride contact, pass over limestone and finally are treated with anhydrous ammonia for the purpose of neutralizing any acid that may be carried in the vapors. The final step is washing with water and settling.

All methods described here are applied in continuous systems and the product is then sweetened when complete purification is desired. It is the final step when refining gasoline.

The purpose of the sweetening operation is to remove objectionable odors, usually due to hydrogen sulfide or mercaptans. The essential reagent for the best known sweetening process, is sodium plumbite, which reacts to form mercaptides and finally disulfides. Sulfur is not removed by the reactions, but is changed in form. The process is commonly known as "Doctor Treatment."

Hypochlorite solution is not in extensive use for the treating of kerosene.

Copper is used in several processes in the form of the salts; chloride sulfate and the hydroxide. Frash introduced copper oxide in 1888. In several of these the vapors or oil passes over the reagent. There are numerous variations of copper processes. Morrell and Comay treat with solutions of copper hypochlorite. Cross utilizes clays containing adsorbed salts of copper over which the vapors of oils are passed. Herthel desulfurizes by passing vapors over anhydrous cupric chloride and then into an alkaline solution of lead salt. Phillips and Stafford treat oil vapors with sodium hydroxide solution containing dissolved copper oxide. The articles cited contain numerous patent and literature references.

The trade recognizes several grades of kerosene, identified by gravity and color. The Oil and Gas Journal mentions these on the market page—a gravity range from 38° to 47° A.P.I. and color from prime white to water white. The source of some of these are given: California, Pacific Coast market 38°-43° A.P.I.; Oklahoma, 40°-42° A.P.I. and 42°-44° A.P.I.; New York, 41°-43° A.P.I.; Gulf Coast, export kerosene, 41°-43° prime white and 44° water white.

There are burning oils in addition to oils of the kerosene grade.

Reference: The Oil and Gas Journal, March 19, 1936, page 105; March 26, 1936, page 57; April 2, 1936, page 29; April 9, 1936, page 36.

Properties and Use of Bentonite

Can you furnish information covering deposits and the use made of bentonite?—E. D. P.

Bentonites are "soapy" clays composed of weathered and altered volcanic ash. They are characterized by an extraordinary capacity to take up many times their own volume of water (adsorption). Their chief use is for oil-well drilling muds to maintain suspensions, but their thickening and suspending properties are utilized in many other industries, and substantial quantities are employed in foundries for rejuvenating molding sand and as a core wash. Most of the activated earths employed for bleaching oils are acid-treated bentonites. Another use of great practical importance, though not constituting a regular outlet for much tonnage, is for sealing dams and for rendering water-bearing gravels and seamy rock impervious. Probably the most typical bentonite is found near Belle Fourche, S. Dak., and in an adjoining area in eastern Wyoming, although it occurs in at least a dozen states, and commercial shipments were reported in 1936 from eight states.

The average price during 1936 for raw bentonite was about $5.00 per ton.

Short articles have appeared on the Technical Questions page as shown in the references. Photostat copies of these are available at 50 cents each.

References: Minerals Yearbook 1937, U. S. Dept. Interior, Bureau of Mines, page 1,260. The Oil and Gas Journal, Nov. 22, 1928; April 23, 1931; August 1, 1935.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Ethanol
(Ethyl Alcohol)

Use—Antifreeze solutions, toilet preparations, manufacture white oils.
Form—Colorless liquid with vinous odor.
Formula—C_2H_5OH.
Specific gravity—0.785
Freezing point— —179° F.
Boiling point—172° F.
Solubility—Freely in water and ether.

LIMITATIONS

Specific gravity	Not above 0.8126 at 68° F.
Color	Water white
Odor	Ethyl alcohol, no foreign
Residue, Max. %	0.003
Boiling point, Max.	172° F.
Acidity, Max.	Trace as acetic

Note.—Grades from 95 per cent to absolute.

Magnesium Hydroxide Method For Sweetening Gasoline

Experiments have been made with granular brucite as a treating agent for gasoline. I understand magnesium hydroxide may also be prepared by hydrating the oxide or calcining magnesite. Any comments relative to the practicability of using magnesium hydroxide in sweetening gasoline will be appreciated.—J. A. K.

Several years ago an effort was made to introduce brucite, the mineral form of magnesium hydroxide, into refineries and natural gasoline plants for the treatment of light oils. Our records do not reveal any large installations.

The following is quoted from Kalichevsky and Stagner:

"Magnesium hydroxide has been considered as an inexpensive neutralizing agent and for some purposes as a substitute for sodium hydroxide, but objections similar to those mentioned in connection with lime have prevented its extensive use in petroleum refining. Magnesium oxide has been patented by Boerlin-Seiler for use in manufacturing a solid petroleum fuel, one part of magnesium oxide being mixed with as much as four parts of oil.

"The naturally occurring magnesium hydroxide (brucite) has recently met with more favor in neutralizing the sulfuric acid of light acid oils. The acid oil is percolated through towers of the granular magnesium hydroxide. The resulting magnesium sulfate is soluble in water and separates from the oil or can be washed from it, provided there are no organic acids present to yield magnesium soaps, which are oil-soluble and cannot be removed by water washing. The granular magnesium is kept moistened with water to make it chemically reactive with the acid. When the tower becomes sluggish because of the accumulation of the magnesium sulfate, it is revived by washing with water, which again exposes the fresh surfaces of the crystals."

Some of the objectionable features of lime as a treating agent, to which reference is made, include: The calcium salts of the naphthenic acids, or other organic acids, have a tendency to go into solution in the product, the time of agitation required to effect the reaction is longer than with caustic soda, the sludge produced settles very slowly and is difficult to remove from the treating unit. Lime soaps retain large quantities of emulsified oil and emulsions of the type of water in oil are formed because of the solubility of the lime soaps in the oil.

References: Kalichevsky and Stagner, Chemical Refining of Petroleum, page 128. Boerlin-Seiler, German Pat. 190,623, April 29, 1906. F. T. Gardner and E. C. Higgins, Petroleum Division, Amer. Chem. Soc., New Orleans Meeting, 1932.

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★*The Girbotol Process, a liquid purification process covering the use of certain reagents for the removal of Hydrogen Sulphide and other acidic gases from gaseous mixtures, is both broadly and specifically protected by U. S. Letters Patent Re. No. 18,958, and other U. S. and foreign Letters Patent, owned and licensed solely by The Girdler Corporation.*

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Mid-Continent December Crude Runs Reduced Almost to 1936 Levels

By D. H. STORMONT

Mid-Continent refiners this month earnestly began to reduce their crude runs to stills as additional gasoline price cuts were posted and gasoline inventories began to move upward with their usual seasonal zest. Several refineries that have been operating continuously for several years, except for periodic shutdowns to clean the stills and make repairs, this month were reported closed, and other refiners reported they were operating at schedules just sufficiently large to keep crude from piling up and hold their pipe line connections. The total for the Mid-Continent area, as estimated at the first of the month, amounted to 544,340 bbls. daily, or a decline of 47,830 bbls. from the November total. Thus as the year closes the total for the area is only 9,000 bbls. greater than in December, 1936, whereas in several months during this year daily runs have exceeded those of last year by over 70,000 bbls.

Oklahoma and Kansas show the largest reductions of the various districts, Oklahoma refiners cutting their total runs by 17,300 bbls. and Kansas refiners by 10,000 bbls. Runs in several of the large refineries in those two districts were reduced by substantial amounts and many smaller refiners lowered their runs by 1,000 to 1,500 bbls. daily. Two plants reported closed for December were Wilcox Oil & Gas Co.'s Bristow, Okla., refinery, and Chase Refining Co.'s Chase, Kans., plant.

In the East Texas district estimates at the first of the month indicated that runs would be lowered by 7,225 bbls. daily to a total of 61,615 bbls., though due to the Sunday shutdowns some refiners stated that their schedules were somewhat uncertain. The shutdowns have not affected runs thus far, as most plants had sufficient oil in storage to continue on their regular schedule, but if the Sunday shutdowns are carried throughout December, and many refiners felt they would be, by the end of the month some refiners with insufficient storage capacity may be forced to curtail their runs. However, there is a great deal of oil in storage in East Texas and it may be that the shutdowns will not affect runs to stills to any great extent. Some refiners reporting reductions were: Talco Asphalt & Refining Co., a 1,500-bbl. cut; Danciger Refineries, Inc., a 1,000-bbl. cut; and East Texas Refining Co., also a 1,000-bbl. reduction.

In North Louisiana and Arkansas the situation was somewhat reversed from that in East Texas as new production in the Schuler field and in the Miller County, Arkansas, extension of the Rodessa field caused some refiners to hold their runs at high levels. In Arkansas runs were advanced to the highest total this year, 28,800 bbls. daily. Total daily runs in North Louisiana, however, declined by 6,600 bbls. to 45,600 bbls., due mainly to two refineries closing down. Shoreline Oil Co.'s plant at Lewis is at present shut down due to strikes, while North Caddo's plant in the Rodessa field was shut down and probably will never be reopened. The remainder of the reduction in that area was accounted for by 1,000-bbl. crude run declines in Arkansas Fuel Oil Co., East Texas Refining Co., and Stanolind Oil & Gas Co. plants.

One new refinery is now under construction in North Louisiana, Premier Oil & Refining Co. 3,000 bbl. skimming plant at Cotton Valley. The plant, which will process high-gravity Cotton Valley crude, is expected to be placed in operation about February 1. Another refinery is also started in the Miller County extension area of the Rodessa field. South Arkansas Refining Co., a newly organized firm, has cleared the site for a plant south of Ravana and will build a 3,000-bbl. plant.

North Central, Southwest, and the Panhandle district of Texas show decreases of 775, 3,750, and 4,630 bbls., respectively. A few small refineries were reported closed down in these areas that were in operation last month. In West Texas, refineries reporting substantial reductions were Gulf Oil Corp. and Standard Oil Co. of Texas.

Mid-Continent Crude Runs

Average Daily (Barrels)

(Advance estimate compiled by The Oil and Gas Journal)

	1935	1936	1937
January	426,070	501,600	531,535
February	448,810	519,960	541,790
March	451,510	478,760	533,875
April	467,765	506,775	558,385
May	466,015	513,510	572,855
June	485,015	527,225	593,625
July	494,210	539,370	605,640
August	508,960	557,650	624,475
September	541,080	553,215	625,485
October	533,620	536,330	619,210
November	524,475	548,015	592,170
December	511,025	535,500	544,340

Operations by Refinery Districts

Daily crude runs

	Dec.	Nov.	Decr.
Arkansas	28,800	26,350	*2,450
East Texas	61,615	68,840	7,225
Kansas	133,350	143,350	10,000
N. Central Texas	40,275	41,050	775
North Louisiana	45,600	52,200	6,600
Oklahoma	141,130	158,430	17,300
Southwest Texas	19,900	23,650	3,750
W. Texas Panhandle	73,670	78,300	4,630
Total	544,340	592,170	47,830

*Increase.

ARKANSAS

Company and location—	Daily capacity	Av. dly. runs— Dec.	Nov.
Berry Asphalt Co., Waterloo	2,000	800	750
Henry H. Cross, Smackover	6,000	4,100	4,300
Lion Oil Ref. Co., El Dorado	17,000	14,600	12,000
Macmillan Pet. Corp., Norphlet	2,500	2,000	2,000
Root Pet. Co., El Dorado	12,000	7,000	7,000
Stephens Ref. Co., Stephens	700	300	300
Total	40,200	28,800	26,350

EAST TEXAS

Company and location—	Daily capacity	Av. dly. runs— Dec.	Nov.
Beacon Oil & Ref. Co., Henderson	4,500	(*)	(*)
Cascade Ref. Co., Reed Switch	3,000	2,500	2,630
Clay Ref. Co., Arp	3,500	3,200	3,385
Danciger Refs., Inc., Longview	10,000	4,000	5,000
East Texas Ref. Co., Longview	10,000	5,500	6,500
General American Ref. Co., Gladewater	4,000	(*)	(*)
Hurricane Pet. Corp., Overton	5,000	3,400	3,360
Hurricane Pet. Corp., Arp Ref., Arp	3,750	3,000	3,095
Lacy Ref. Co., Kilgore	3,000	2,315	2,500
Magnolia Pet. Co., Corsicana	5,000	4,500	5,180
Martin Ref. Co., Gladewater	3,000	2,120	2,420
McMurrey Ref. Co., Tyler	10,000	2,480	2,530
Premier Oil Ref. of Texas, Willow Springs	4,500	2,700	3,000
Paluxy Asphalt Co., Talco	5,000	3,000	3,300
Sinclair Ref. Co., Camp Switch	6,000	2,000	3,100
Solvex Refs., Inc., Gladewater	4,500	3,000	3,000
Southport Pet. Co., Kilgore	5,000	3,000	3,000
Talco Asphalt & Ref. Co., Mt. Pleasant	7,000	5,000	6,500
Texas Co., The, Dallas	16,000	7,800	8,000
Tower Ref. Co., Overton	3,000	2,100	2,340
Total	116,750	61,615	68,840

*Shut down.

KANSAS

Company and location—	Daily capacity	Av. dly. runs— Dec.	Nov.
Barnsdall Ref. Co., Wichita	6,000	4,000	4,000
Bay Pet. Co., McPherson	3,500	2,100	2,350
Chanute Ref. Co., Chanute	2,000	800	1,000
Chase Ref. Co., Chase	800	(*)	550
Derby Oil Co., Wichita	8,000	4,500	4,500
El Dorado Ref. Co., El Dorado	5,000	3,500	3,500
Falcon Ref. Co., Inc., Great Bend	1,000	500	600
Globe Oil & Ref. Co., McPherson	12,500	12,000	12,500
Kanotex Ref. Co., Arkansas City	12,000	5,000	6,000
Kreuger Ref. Co., Natoma	150	50	50
National Ref. Co., Coffeyville	8,000	4,600	5,200
Pet. Products Co., Chanute	800	700	700
Phillips Pet. Co., Kansas City	23,000	16,300	17,600
Shell Petroleum Corp., Arkansas City	2,000	1,000	1,500
Sinclair Ref. Co., Coffeyville	20,000	12,000	14,000
Sinclair Ref. Co., Argentine	20,000	8,100	8,700
Skelly Oil Co., El Dorado	11,000	7,000	7,200
Socony-Vacuum Oil Co., Inc., Augusta	23,000	21,000	22,000
Standard Oil Co., (Indiana), Neodesha	20,000	18,000	18,000
United Ref. Co., Russell	20,000	9,200	10,100
Vickers Pet. Co., Potwin	1,200	500	600
	3,500	2,500	2,700
Total	204,500	133,350	143,350

*Shut down.

NORTH CENTRAL TEXAS

Company and location—	Daily capacity	Av. dly. runs— Dec.	Nov.
Baird Ref. Co., Baird	1,500	1,300	1,300
Bryson Ref. Co., Bryson	600	(*)	400
Coleman Ref. Co., Coleman	750	300	300
Continental Oil Co., Wichita Falls	6,000	4,550	3,165
Exchange Pet. Corp., Albany	800	(*)	200
Falls Ref. Co., Wichita Falls	2,000	300	300
Gainesville Ref. Corp., Gainesville	2,500	1,100	1,250
Gratex Ref. & Fuel Oil Co., Graham	500	275	300
Gulf Oil Corp., Fort Worth	8,000	6,800	5,200
Hightower Oil & Ref. Corp., Brownwood	750	100	100
Jacksboro Ref. Co., Jacksboro	250	50	50
Kraco Ref. Co., Bryson	2,000	700	1,100
La Salle Pet. Co., Burkburnett	3,500	1,000	1,000
Magnolia Pet. Co., Fort Worth No. 1	12,000	5,650	6,300
Midway Ref. Co., Coleman	300	100	150
Norgold Ref. Co., West Olney	500	(*)	(*)
North Texas Oil & Ref. Co., Gainesville	600	300	300
Ohio Oil Co., Fort Worth	5,000	3,500	4,000
Olney Oil & Ref. Co., North Olney	3,000	1,000	1,500
Panhandle Ref. Co., Wichita Falls	4,200	2,250	2,500
Panhandle Ref. Co., Lueders	1,000	850	875
Sinclair Ref. Co., Fort Worth	5,000	2,800	2,800
Southland Ref. Co., Megargel	500	200	200
Taylor Ref. Co., Taylor	5,000	1,000	1,000
Taxman Ref. Co., Wichita Falls	3,250	(*)	(*)
Texas Pacific Coal & Oil Co., Caddo	1,000	600	800
Tucker Oil Co., Burkburnett	250	150	160
Tydal Ref. Co., Gainesville	1,850	1,400	1,600
Wagoner Ref. Co., Electra	6,000	4,000	4,000
Total	78,500	40,275	41,050

*Shut down.

NORTH LOUISIANA

Company and location—	Daily capacity	Av. dly. runs— Dec.	Nov.
Arkansas Fuel Oil Co., Bossier City	25,000	19,000	20,000

Company and location—	Daily capacity	Av. dly. runs Dec.	Nov.
Atlas Pipe Line Co., Shreveport	12,500	9,600	9,000
Bayou State Oil Corp., Hosston	750	500	500
East Texas Ref. Co., Sandra	7,000	6,000	7,000
Griswold Refs., Inc., Shreveport	1,000	(*)	(*)
North Caddo Ref., Rodessa	1,500	(*)	1,200
Rodessa Oil & Ref. Co., Cedar Grove	8,000	7,000	7,000
Shoreline Oil Co., Lewis	5,000	(*)	3,000
Stanolind Oil & Gas Co., Superior	5,000	3,500	4,500
Total	65,750	45,600	52,200

*Shut down.

OKLAHOMA

Company and location—	Daily capacity	Av. dly. runs Dec.	Nov.
Anderson-Prichard Ref. Corp., Cyril	6,500	6,000	6,000
Barnsdall Ref. Co., Barnsdall	6,000	3,500	4,500
Barnsdall Ref. Co., Okmulgee	10,000	(*)	(*)
Bell Oil & Gas Co., Grandfield	5,000	3,200	3,200
Black Gold Ref. Co., Oklahoma City	3,000	900	1,300
Champlin Ref. Co., Enid	16,000	7,000	9,500
Cities Service Oil Co., Okmulgee	4,000	2,100	2,200
Cities Service Oil Co., Ponca City	12,000	7,100	8,000
Continental Oil Co., Ponca City	30,000	15,150	19,000
Cushing Ref. & Gasoline Co., Blackwell	1,700	800	1,500
Cushing Ref. & Gasoline Co., Cushing	6,200	2,500	2,400
Cosco Oil Co., Wynnewood	2,500	1,500	2,000
Deep Rock Oil Corp., Cushing	10,000	9,000	9,000
Eason Oil Co., Enid	3,000	2,000	2,500
Globe Oil & Ref. Co., Blackwell	8,000	(*)	(*)
Johnson Oil Ref. Co., Cleveland	6,000	4,200	4,000
Mid-Continent Pet. Corp., West Tulsa	40,000	22,900	25,000
Ohio Oil Co., Bristow	5,000	2,800	3,000
Omar Ref. Co., Garber	4,000	2,000	2,500
Peppers Gasoline Co., Oklahoma City	500	400	400
Phillips Pet. Co., Okmulgee	6,500	4,700	5,330
Pure Oil Co., Muskogee	10,000	7,580	7,500
Pyramid Prod. & Ref. Corp., Oklahoma City	600	(*)	(*)
Rock Island Ref. Co., Beckett	6,500	5,000	5,000
Sinclair Ref. Co., Sand Springs	8,000	4,100	4,500
Sooner State Ref. Co., Oklahoma City	700	(*)	(*)
Sun Oil Co., Yale	5,000	1,800	2,000
Sunray Oil Co., Allen	6,500	2,900	3,000
Texas Co., West Tulsa	16,000	10,600	10,800
Tide Water Oil Co., Drumright	12,000	11,000	12,000
Triangle Prod. & Ref. Co., Oklahoma City	1,200	400	400
Wilcox Oil & Gas Co., Bristow	6,000	(*)	2,000
Total	258,400	141,130	158,430

*Shut down.

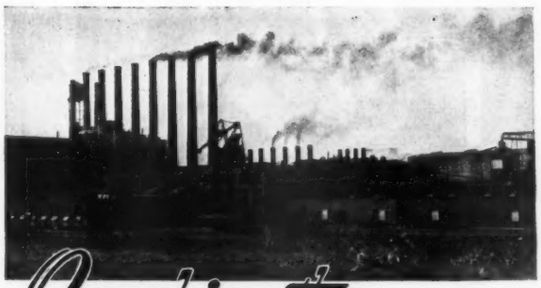
SOUTHWEST TEXAS

Company and location—	Daily capacity	Av. dly. runs Dec.	Nov.
Amsco Ref. Co., Mirando City	4,500	3,250	3,500
Carle Ref. Co., Inc., San Antonio	1,000	600	600
Humble Oil & Ref. Co., San Antonio	5,000	3,100	3,400
Ina Oil & Ref. Co., Hondo	400	(*)	50
Magnolia Pet. Co., Luling	8,000	5,100	7,600
Pettus Oil & Ref. Co., Pettus	1,000	800	800
Pettus Oil & Ref. Co., Mathis	1,000	800	800
Phoenix Ref. Co., San Antonio	1,200	700	800
Phoenix Ref. Co., Samfordyce	900	400	600
Pioneer Oil & Ref. Co., Somerset	2,000	850	900
Rado Ref. & Prod. Co., McAllen	800	700	750
Texas Co., San Antonio	3,000	2,500	2,700
Valley Ref. Co., Harlingen	1,000	700	700
White Wing Ref. Co., Sullivan City	1,000	400	450
Total	30,800	19,900	23,650

*Shut down.

WEST TEXAS AND PANHANDLE

Company and location—	Daily capacity	Av. dly. runs Dec.	Nov.
Aero Gas Ref. Co., Pecos	225	100	100
Coltex Ref. Co., Colorado	12,500	8,000	8,000
Concho Ref. Co., San Angelo	250	100	100
Cosden Oil Co., Big Spring	10,000	9,500	9,000
Danciger Refs., Inc., Pampa	6,500	5,000	5,000
Danube Oil Corp., Borger	400	200	300
Gibson Oil Corp., Magic City	250	100	100
Gulf Oil Corp., Sweetwater	7,000	5,480	6,500
Howard County Ref. Co., Big Spring	2,000	600	1,000
Moutray Oil Co., Hawley	1,400	1,000	1,030
Onyx Ref. Corp., Abilene	2,000	1,500	1,500
Panhandle Ref. Co., Kings Mill	2,500	1,700	1,700
Payward Ref. Co., Shamrock	750	500	400
Phillips Pet. Co., Borger	50,000	21,400	23,330
Sageland Ref. Co., Sweetwater	1,000	300	500
Shamrock Oil & Gas Corp., Sunray	2,500	1,300	1,500
Shamrock Oil & Gas Corp., Meldavis	1,600	1,550	1,600
Stamford Ref. Co., Stamford	450	400	400
Standard Oil Co. of Texas, El Paso	14,000	7,500	8,300
Starlight Ref. Co., Ballinger	500	200	200
Texas Co., El Paso	2,000	1,300	1,300
Texas Co., Amarillo	6,000	3,000	3,200
West Texas Ref. Co., Pecos	6,000	1,400	1,600
Western Ref. Co., Mertzon	1,000	400	400
West Texas Oil & Ref. Co., Sweetwater	60	40	40
Wickett Pet. Co., Wickett	3,000	1,100	1,200
Total	126,585	73,670	78,300



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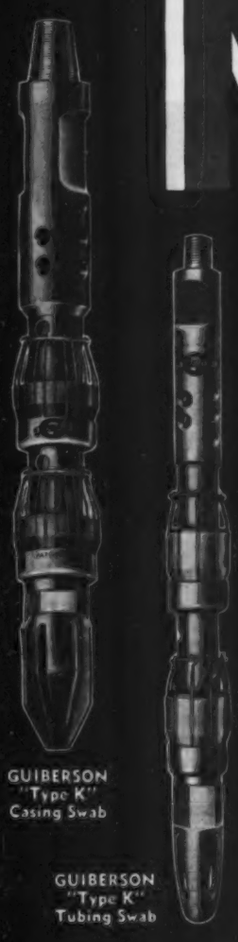

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FIELD OPERATIONS

Summarizing the Week's Developments

Extension of the Pawnee Rock pool, Pawnee County, Kansas, was assured by a producer in section 13-20-16w. Siliceous lime production was uncovered in the old Ferguson Ranch area of western Elk County, in section 23-30-8. Four new producers were reported in the Neosho Falls district of Woodson County.

OKLAHOMA

An important Coal County wildcat near Centrahoma found salt water at 6,722 feet, total depth, and operators were to plug back and test showings in shallower formations. A wildcat opened a new gas producing area in section 4-1n-13ecm, Texas County, Oklahoma Panhandle.

TEXAS

A new pool was opened in southeastern Jim Wells County, Texas, with the discovery well starting at 205 bbls. in 13 hours. The Heyser field in Victoria County was extended 3,600 feet northeasterly. Most of the interest in the Gulf Coast was on the Louisiana side of the district where production tests are under way at two wildcats in Jefferson Davis and Calcasieu parishes. Production from a 10,000-foot zone is indicated in a test in Lafourche Parish. The Anahuac field in Chambers County, Texas, was extended 3,000 feet easterly with a 296-bbl. initial producer. In West Texas the Harper field in Ector County was extended 1¼ miles by a 570-bbl. well. A test between the Denver pool in Yoakum County and the Wasson pool in Gaines County is making a good oil showing and may connect the two pools. The K.M.A. deep sand horizon in Wichita County was extended a mile westward by a well flowing 60 bbls. an hour. A deep test is starting in southeastern Gray County, in the Panhandle, the first such test in that area. The first test in Upshur County to explore the Kelsey dome and the deep Trinity sands will be drilled 1 mile north of the town of Kelsey.

TEX-LA-ARK

Four new wells were completed in the Arkansas side of the Rodessa field and two more deep sand wells were brought in in the Schuler area in Arkansas.

NEW MEXICO

Hobbs field in Lea County, New Mexico, was extended one-fourth mile northeast by a 2,545-bbl. well in section 21-18-38. A sand-pool opener was completed in section 31-23-37, 3 miles northeast of the Cooper pool. A well that flowed at the rate of 152 bbls. of oil an hour was completed in section 21-23-36, Lynn pool.

ROCKY MOUNTAIN FIELDS

A deep test in Lincoln County, Colorado, has been abandoned 100 feet in the Arbuckle limestone.

CALIFORNIA

An oil sand in rocks of Miocene age was uncovered in the west end of the Montebello field in California. The preliminary test brought up oil of 35 gravity. The well is bottomed at 6,353 feet. The discovery is regarded as important. Ninety drilling permits have been granted in the Long Beach end of the Wilmington field.

ILLINOIS

Oil presumably from the Chester series has been uncovered in Fayette County, Illinois, but the well has not been satisfactorily tested because of mechanical trouble.

Completions in All Fields

(Week Ending December 11, 1937)

	Oil	Gas	Dry	Total	1937 total comp. to date	1936 total comp. to date
Penna. Grade fields	96	18	11	125	4,402	3,894
Ohio	16	10	20	46	1,212	853
Indiana	7	9	6	22	129	191
Illinois	11	0	6	17	316	35
Michigan	10	0	5	15	775	782
Kentucky	7	11	4	22	692	320
Kansas	33	2	8	43	2,505	1,670
Oklahoma	29	2	9	40	2,507	2,515
Texas:						
North Central Texas	30	0	14	44	2,590	2,613
West Texas	65	0	12	77	2,566	1,551
Texas Panhandle	24	3	0	27	792	634
East Central Texas	12	1	2	15	684	391
East Texas	46	0	1	47	2,291	2,426
East Texas border	2	0	0	2	312	186
Gulf Coast Texas	27	0	7	34	1,486	1,202
Southwest Texas	42	0	10	52	3,037	2,802
Total Texas	248	4	46	298	13,758	11,805
North Louisiana	8	5	1	14	636	640
Gulf Coast Louisiana	5	0	0	5	433	387
Total Louisiana	13	5	1	19	1,069	1,027
Arkansas	7	0	0	7	174	87
Montana	0	0	0	0	214	242
Wyoming	3	0	0	3	105	127
Colorado	0	0	1	1	19	29
New Mexico	8	0	0	8	664	544
Utah	0	0	0	0	4	8
California	24	0	9	33	1,431	1,101
Total United States	512	61	126	699	29,976	25,230
Total previous week	444	62	139	645		
Difference	68	1	13	54		

Outstanding Fields—Highlights

(Week Ending December 11, 1937)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Hastings	2	25	5	2,492	411	19,518
McCampbell	4	6	4	1,024	93	4,327
Saxet	6	11	4	492	586	41,437
Benavides	3	9	2	271	110	5,567
East Texas	36	89	46	2,394	24,121	417,815
Talco	4	21	11	3,662	574	32,267
Ector County	14	43	19	17,347	771	27,500
Winkler County	9	10	8	5,492	1,519	42,900
OKLAHOMA						
Fitts	1	13	2	2,536	946	78,350
Billings deep sand	1	6	1	318	58	7,550
KANSAS						
Ellis County	4	20	6	9,267	260	10,005
Barton County	9	34	10	9,396	294	12,480
Russell County	11	47	6	3,193	960	28,500
Rice County	12	22	3	2,361	1,038	36,485
NEW MEXICO						
Lea County	10	108	8	3,331	1,562	99,350
LA-ARK-TEX						
Rodessa, Ark.	2	12	2	450	49	9,505
Rodessa, La.	2	16	2	235	426	42,705
Rodessa, Tex.	3	12	2	600	380	18,435
Lisbon, La.	3	13	5	3,900	151	3,635
Jennings, La.	0	15	0	0	82	14,800
MICHIGAN						
Buckeye	8	56	9	1,175	311	24,362
ILLINOIS						
Central Illinois	27	114	11	2,724	229	19,100
CALIFORNIA						
Wilmington	8	29	4	1,842	332	63,250

An Important Announcement—

We take pleasure in announcing that, effective January 1st, 1938, THE PARKERSBURG RIG & REEL CO. becomes the exclusive distributor for SMITH SEPARATOR CORPORATION, Tulsa, Oklahoma.

This arrangement is made in the belief that it will expedite and improve the service of both concerns on a line of equipment which has for many years contributed to the safe, efficient, economical operation of the oil industry.

In expressing our appreciation of your patronage in the past, these pioneer concerns solicit the privilege of serving you in the future.

Signed

THE PARKERSBURG RIG & REEL CO.
SMITH SEPARATOR CORPORATION

Eastern Field Report

By STAFF CORRESPONDENT

WEST VIRGINIA DEEP TEST IN JACKSON COUNTY A FAILURE

PITTSBURGH, Pa., Dec. 8.—Another outside deep test in West Virginia has proved a failure. In Jackson County, United Carbon Co. drilled the No. 1 or second test on the Elizabeth Ward Perkins farm in Washington district in the Oriskany sand and struck salt water. The Oriskany was topped at 5,496 feet after 149 feet of Corniferous lime and at 5,502-04 feet water rose 800 feet and was continuing to increase with the tools down to 5,507 feet. The company will attempt to drill through the sand.

Another wildcat deep test in West Virginia has reached the Oriskany. In Tucker district, Wirt County, Carnegie Natural Gas Co. topped that formation at 5,307½ feet after drilling through 174½ feet of Corniferous lime. The tools had not penetrated that horizon sufficiently to yield a showing.

In Southwest Pennsylvania, an important deep test, is drilling in the Oriskany. In Washington County, Norwood P. Johnston and others reached top of the Oriskany at 6,695 feet and drilled in 7½ feet without a showing on the James McBurney farm in Mount Pleasant Township. The Oriskany sand is finely grained and tightly cemented so very little headway is being made. The thickness of the Onondaga was 220 feet.

This test has been drilling for more than a year and the lower Devonian was reached only after a tenacious effort. After a long period of caving shales causing fishing jobs, and then the Marcellus shales filled with explosive gas pockets, the hole was cased and the casing carried on casing rigs and slips. The hole was underreamed and pipe lowered until the Onondaga was reached. It has been one of the most arduous cable drilling tests in the East in many years.

SOUTHEAST OHIO

In Belmont County, Natural Gas Co. of West Virginia completed a test on the Alexander McFetridge farm in the SW quarter of section 25, Richland Township. It was drilled in the First Cow Run sand, depth 721 feet, gauging 145,000 feet a day. In the SW quarter of section 26, same township, Union Gasoline & Oil Corp. drilled No. 2 Fred Kurth through the Berea to 1,703 feet and it was dry. In the SE quarter of section 32, Harry A. Dague and others drilled No. 81 Theresa Hryvanak through the Berea to 1,987 feet and it was also dry.

In Knox County, Kundtz-Hulse, Inc., completed No. 3 J. W. Mossholder, in the NE quarter of section 10, Jackson Township, in the Clinton sand at 3,106 feet. It will make a 20-bbl. pumper

In Meigs County, Edward Simpson and others completed at test on the Mary E. Jloiden farm in northern part of Lot 285, Sutton Township, in the Berea at 1.887 feet. It produced 2 bbls. the first day after shot and had been a former Cow Run producer.

In Washington County, Schwartz & Dunn completed a test on the Harvey E. Bowman farm, 2 miles east of Chesterhill, Lot 1,143, Wesley Township, in the First Cow Run sand at 360 feet and it produced 1 bbl. the first day, not shot. One mile south of Dale in section 26, Wesley Township, H. B. Walker & Co. completed No. 46 John Sheets in the Mercer sand at 153 feet, a half-barrel pumper.

SOUTHWEST PENNSYLVANIA

One producer, one gas well and three dry holes were reported from Southwest Pennsylvania. In Butler County, Walters & Co. completed a test on the R. W. Hearst farm in Adams Township in the Fifth sand, showing 5 bbls. In this township, George L. Yaste drilled on the J. Remison farm through the Fourth sand to 1,848 feet and it was dry. These wells were in search of a continuation of the 100-Foot pool on the United Presbyterian Orphanage in the same township.

In Greene County, Carnegie Natural Gas Co. completed No. 2 Sadie A. Connor in Washington Township at 984 feet, gauging 115,000 feet. Top of the Murphy sand was at 955 feet with gas at 965-970 feet. In Aleppo Township, Dunn Mar Oil & Gas Co. abandoned No. 2 M. Ullom Heirs at 3,361 feet, with only an oil showing in the Fifth sand.

In North Strabane Township, Washington County, Keystone Gas Co. drilled on the J. T. Beabout farm to 2,881 feet, the Fifth sand, and it was dry.

In South Strabane Township, Washington County, Penn Ohio Oil & Gas Co. drilled on the Porter Heirs farm to 4,170 feet and will plug back and shoot the Thirty-foot sand. In Peters Township, R. M. Duddin and others are running casing to 2,202 feet in No. 2 J. E. Johnston. In Smith Township, Citizens Water Co. is down 900 feet on the J. T. Simpson farm.

Greene County

In Center Township, Greene County, Rutan Oil Co. is cementing the break above the Nineveh Thirty-foot sand in No. 4 C. T. Harvey. Charles Mong and others are down 3,110 feet in No. 2 J. L. Metz (Weir). In Washington Township, this operator is drilling at 1,365 feet in No. 2 Jacob Johns.

In Jackson Township, Equitable Gas Co. is deepening the P. D. Phillips well and drilling at 3,425 feet. In Center Township, it is deepening No. 1 D. M. Thorp from 2,393 feet. In Wayne Township, it has reached 2,301 feet in No. 4 Sanford C. Brock, with Big Injun at 2,219 feet and gas showing at 2,240 feet. In this township, Manufacturers Light & Heat Co. is shut down for cable at 2,130 feet in No. 3,557 Haddie J. Ross. Eddy & Johnson have reached 1,240 feet on the E. W. Maple farm.

In Richhill Township, Smith McCracken is drilling at 2,530 feet in the Asa Hughes test. Burleigh Wright is down 2,026 feet on the Rush farm.

Deep Tests

In Fayette County, Potter Development Co., William E. Snee and others, are cementing at 4,325 feet in No. 2 Summit Hotel on Chestnut Ridge in South Union Township. In Allegheny County, South Penn Oil Co. and others are fishing tools on the Christian Z. Schove farm.

WEST VIRGINIA

Four small producers were completed in West Virginia. The largest was McBurney and others No. 3 G. H. Darnell in Clay district, Ritchie County, completed in the Maxton sand at 1,670 feet and good for 10 bbls.

In Lincoln County, South Penn Oil Co. completed two wells. In Duval district, No. 8 Holley-Stephenson was completed in the Berea sand at 2,520 feet good for 4 bbls. In Union district, No. 8 Richard Woodrum was completed in the Shale at 3,750 feet showing 4 bbls.

In Hancock County, R. J. Braden Co. completed No. 22 C. E. Brenneman in Grant district in the Berea at 1,110 feet, good for 2 bbls.

Gas Wells

In Cabell County, Merritts Creek Gas Co. deepened No. 13 Acres Land Co. in Guyandotte district from 1,370 feet. The Berea was at 1,920-34 feet; Brown shale 2,495-2,863 feet, with 20,500 feet of gas in the Berea and 68,000 feet in the Brown shale at 2,600 feet.

In Calhoun County, Boggess & Starcher completed No. 2 E. R. Wilson in Washington district at 2,050 feet. Big Injun was at 2,029 feet, with 2,000,000 feet of gas at 2,029-50 feet.

In Gilmer County, Oren R. Bush completed a test on the Russell McQuain farm in Glenville district in the Big Injun sand at 1,582 feet, gauging 240,000 feet. It had an oil showing.

In Lincoln County, John Pridemore and others completed No. 2 Jacent Pridemore in Carroll district in the Brown shale at 3,442 feet, gauging 68,000 feet.

In Mingo County, Huntington-Oklahoma Gas Co. completed a test on the Floyd Brewer farm in Warfield district at 3,329 feet. Big lime was at 1,300-1,405 feet Big Injun, 1,465-1,525 feet; Berea, 1,999-2,103 feet: Brown shale, 2,815-3,220 feet, with 134,400 feet of gas at 3,055 feet.

In Ritchie County, W. R. Hays deepened the test on the M. J. Livingston (Daniel Wilson) farm in Murphy district in the Injun sand, gauging 37,320 feet. In this district, Lima Gas Co. completed a test on the Floyd F. Goff farm in the Injun sand at 1,900 feet, gauging 45,000 feet. In this district Patterson & Pope drilled No. 7 Harry W. Patterson through the Injun sand to 1,990 feet and it was dry.

Oriskany Gas Field

Seven operations were completed in the Oriskany gas pools in Kanawha County. The largest well was completed in Poca district. South Penn Oil Co. completed the first deep test on the S. S. Beane farm with the Oriskany topped at 4,756 feet and gas at 4,758 feet. At 4,761 feet there was 14,000,000 feet and the well was turned in the line.

In this district, United Fuel Gas Co. completed No. 4,760 H. A. Shirkey at 4,825 feet, gauging 9,000,000 feet. This well had been on fire and was shut in. In Poca district, West Virginia Gas Co. completed a test on the R. W. St. Clair and others at 1,823 feet, the Big Injun sand, gauging 830,000 feet.

In Elk district, United Fuel Gas Co. completed No. 4,753 D. M. Canterbury at 5,156 feet. After shot, it bridged and when cleaned gauged 13,000,000 feet. Columbian Carbon Co. completed the test on the Omer L. Burdette farm at 5,094 feet with top of the Oriskany at 5,044 feet and a gauge of only 116,000 feet.

In Malden district, Godfrey L. Cabot, Inc., drilled a test on the Roane Land Co. to 5,198 feet through the Oriskany and it is dry. In this district, the same operator is completing No. 7 Nellie P. Tompkins, with the Oriskany topped at 5,035 feet and 116,000 feet a day before shot showing at 5,051 feet.

Two new locations were made in Poca district. United Carbon Co. made a location on the W. R. Young farm, elevation 966.7 feet, just north of T. H. Newhouse gas well. Liosag Fuel Co. made a location on the H. C. Matthews Heirs, elevation 779.55 feet.

In Louden district, Columbian Carbon Co. topped the Corniferous lime at 4,547 feet on the Susan Hoge farm. In Union district, Godfrey L. Cabot, Inc., topped that formation at 4,754 feet on the Fred Strasser and others lease. Columbian Carbon Co. reached the Corniferous at 4,998 feet on the C. B. Cavender and others farm.

Deep Tests

In Wood County, the test of Belmont Quadrangle Co. on the D. C. White farm in Steel district is drilling at 4,398 feet. In Tygart district, W. H. Bickel is preparing to shoot the Oriskany sand on the Reese Blizzard farm. It is still making some oil from top of the sand.

In Jackson County, Potter Development Co. is drilling at 810 feet on the William Chancey farm in Ripley district. In Ravenswood district, W. H. Petry is drilling at 4,450 feet D. O. Curry farm.

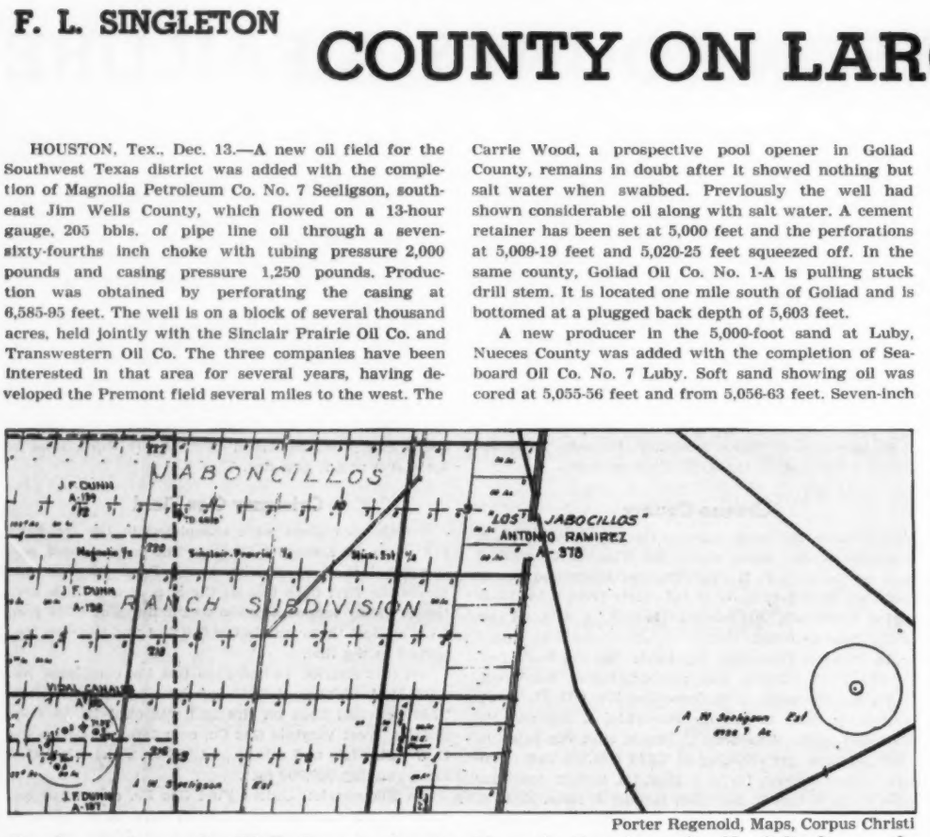
In Clay County, Pittsburgh & West Virginia Gas Co. is drilling at 3,980 feet on the Jesse Chapman farm in Otter district. In Sherman district, Boone County, Owens Illinois Glass Co. is fishing tools lost at 5,220 feet in No. 32 Peytonia Coal Land Co. In Roane County Ohio Valley Gas Co. is pulling casing to abandon the deep test on the M. C. Larch and others lease in Harper district which was dry through the Oriskany.

Southwest Texas District

ANOTHER POOL IN JIM WELLS COUNTY ON LARGE ACREAGE

By F. L. SINGLETON

HOUSTON, Tex., Dec. 13.—A new oil field for the Southwest Texas district was added with the completion of Magnolia Petroleum Co. No. 7 Seeligson, southeast Jim Wells County, which flowed on a 13-hour gauge, 205 bbls. of pipe line oil through a seven-sixty-fourths inch choke with tubing pressure 2,000 pounds and casing pressure 1,250 pounds. Production was obtained by perforating the casing at 6,585-95 feet. The well is on a block of several thousand acres, held jointly with the Sinclair Prairie Oil Co. and Transwestern Oil Co. The three companies have been interested in that area for several years, having developed the Premont field several miles to the west. The new field has been named East Premont. The test has been drilling for several months and reached a depth of 8,162 feet after it blew out and caught fire. Several untested sands have been found above its present depth and future development will be watched with interest. The discovery well is one mile west of the Kleberg County line and about four miles southeast of the town of Ella in the Los Jaboncillos Grant.



Porter Regenold, Maps, Corpus Christi

East Premont area, Jim Wells County, showing Magnolia Petroleum Co. No. 7 Seeligson, the discovery well and its relation to the Premont field to the west (indicated by broken circle)

In the same county, and west of Orange, H. J. Porter and others No. 1 Charles E. Walcott in the Zenobia Cuellar Survey No. 1 has attracted attention due to an attempted blow out while drilling at 5,906 feet. It is drilling ahead in shale below 5,939 feet having topped the Heterostegina section at 5,482 feet and the Jackson at 5,205 feet. The gas showing is believed to have come from a section of sand that was cored at 2,739-2,744 feet.

Three-quarters of a mile southwest of the recently opened Richard King pool discovery well, Southern Minerals Corp. was preparing to make a production test of No. 3 King. A 24-foot gas sand section is reported to have been found and the hole is bottomed in oil sand at 4,015 feet. Pipe has been cemented on bottom and a production test will be made through perforations. Southeast of the King field, Southern Minerals Corp. No. 1 Ida Walker is drilling in shale below 5,320 feet, after running a Schlumberger survey to 5,200 feet.

McNeil Petroleum Co. No. 1 Moreno, the discovery well of the Lost Mule field is pumping an estimated 60 bbls. of oil per day and 150 bbls. of sulfur water from the Chalk formation bottomed at 1,756 feet.

In the Pearsall area, Frio County, the outpost test of Amerada Petroleum Corp. No. 1 Neima topped sand at 3,920 feet and at 3,921 feet, the tools were blown up in the hole, causing the hole to bridge which stuck the drill stem. It is located 3 miles west of Pearsall.

Good Prospect Misbehaves

The outcome of Rual B. Swiger and others No. 1-B Carrie Wood, a prospective pool opener in Goliad County, remains in doubt after it showed nothing but salt water when swabbed. Previously the well had shown considerable oil along with salt water. A cement retainer has been set at 5,000 feet and the perforations at 5,009-19 feet and 5,020-25 feet squeezed off. In the same county, Goliad Oil Co. No. 1-A is pulling stuck drill stem. It is located one mile south of Goliad and is bottomed at a plugged back depth of 5,603 feet.

A new producer in the 5,000-foot sand at Luby, Nueces County was added with the completion of Seaboard Oil Co. No. 7 Luby. Soft sand showing oil was cored at 5,055-56 feet and from 5,056-63 feet. Seven-inch casing was cemented on bottom at 5,072 feet and the well flowed 146 bbls. in 24 hours through a one-eighth-inch choke with tubing pressure 675 pounds and casing pressure 1,000 pounds. Production is from perforations at 5,057-66 feet. No showing was encountered in the 4,300 foot sand.

A new sand and a quarter mile south extension was indicated for the Alta Mesa field, Brooks County, with the testing of Standard Oil Co. of Texas No. 1 Mestina. Drilled to 3,100 feet, the hole was plugged back to 2,630 feet and the well is being tested after perforating at 2,613 feet. Same company No. 3 Mestina, several hundred feet east of No. 1 is drilling below 1,500 feet.

Several Interesting Developments

Several interesting developments took place in Victoria County, including a 3,600-foot northeast extension to the Heyser field, and the showing of oil in a wildcat midway between the Placedo and Keran fields. Gulf Oil Corp. No. 1 Bonner was washed in from a screen setting made in sand topped at 5,476 feet and is flowing an estimated 8 bbls. per hour through a quarter-inch choke, with tubing pressure 1,500 pounds and casing pressure 1,700 pounds, Stanolind Oil & Gas Co. No. 1 Henderson and Pickering has shown indications of opening production midway between the Placedo and Keran fields, as a drill-stem test at 6,371 feet showed considerable oil and salt water. The perforations have been squeezed off and testing continues. The Greta sand area of the North McFaddin field was being extended with the showing of Barnsdall Oil Co. No. 1 J. A. McFaddin. Gas sand was cored at 4,399-4,406 feet and oil sand from 4,406-12 feet. On a 54-minute drill stem test it flowed pipe line oil, and 7-inch casing has been cemented for a production test. In the Telfener area, W. V. Bowles No. 1 Robertson, tested oil and salt water in the 5,600 feet zone and was plugged back the second time to sidetrack and redrill the 5,100-foot sand, which showed possibilities on a Schlumberger survey.

Laredo District

In the Laredo district, a two mile north extension to the Killam field, Webb County, was indicated by Kirkwood & Morgan No. 1 Garcia-Villareal located in the T. Poitevent Survey. The hole was bottomed in hard lime at 2,005 feet and 5½-inch casing cemented on bottom. Oil sand was cored at 1,967-1,974 feet. A drill stem test was attempted at 1,950-74 feet, but it was a failure.

One mile north of the Oilton field, J. R. B. Moore and others continue testing No. 1 Garcia-Villareal after it had shown for a gas well on two drill stem tests. The casing was perforated at 1,919-21 feet and at 1,907-11 feet and it tested 300 pounds of rock pressure. The perforations have been squeezed off and another test will be made, but the prospects of oil production or not bright.

One mile north of Rio Grande City, Starr County, Moss and Heard No. 6 S. B. Ricaby, abandoned two weeks ago at a total depth of 1,765 feet, blew out and is blowing wild, making gas, mud and considerable water. In the northeastern part of the county, Wheelock & Collins No. 1 Guerra, a prospective pool opener in the San Jose Grant Abstract 575 feet is being retested after it showed only a slight show of oil with water last week.

The Benavides field, Duval County was extended about a half mile north with the completion of L. Glasscock No. 4 Farias. The Cockfield sand was cored last week from 5,358-68 feet and it was completed for an initial production of 50 bbls. per day through 9-64-inch choke with tubing pressure 390 pounds and casing pressure 980 pounds. Considerable activity is getting under way near these outpost Cockfield producers that have added several hundred additional acres for development.

Balcones Fault Line

The most interesting development along the Bacones Fault line, took place in the Batesville field, Zavalla County where H. F. Wilcox Oil & Gas Co. is preparing to test No. 2 T. T. Gillam. Soft lime with a good show of oil was cored at 3,975-77 feet and 7-inch casing cemented for a production test. The Austin Chalk was topped at 3,110 feet, Eagleford Shale at 3,578 feet, Buda lime at 3,300 feet, Del Rio clay at 3,762 feet, Georgetown lime at 3,893 feet and the Edwards lime at 3,940 feet. The outcome of this well is interesting due to the freakish showing of the same company No. 1 Gillam, the discovery well, one location northeast. This well was brought in flowing an estimated production of 5,000 bbls. per day from a total depth of 3,946 feet, but soon went to salt water.

In Bastrop County, J. W. Bibbs No. 1 Lentz is being watched closely as it cores ahead in soft lime with a slight odor of oil below 3,530 feet.

McNeil Petroleum Co. No. 1 Moreno, discovery well of the Lost Mule field is pumping an estimated 60 bbls. of oil per day and 150 bbls. of sulfur water from the chalk formation bottomed at 1,756 feet.

In the Pearsall area, Frio County, the outpost test of Amerada Petroleum Corp. No. 1 Neima, topped sand at 3,920 feet and at 3,921 feet, the tools were blown up in the hole, causing the hole to bridge, which stuck the drill stem. It is 3 miles west of Pearsall.

COMPLETED WELLS IN SOUTHWEST TEXAS DISTRICT

Completed wells in the proven fields, with their total depth, and the initial 24 hour production of the producing wells are as follows:

Aransas County

McCampbell field: Atlantic Refining Co. No. 2-A Por-

terfield, 7,259 feet, 69 bbls. three-eighths inch choke; Atlantic Refining Co. No. 6-B Porterfield, 7,247 feet, 128 bbls. three-sixteenths inch choke; Atlantic Refining Co. and others No. 2-D Porterfield, 7,232 feet, 237 bbls. per day, three-sixteenths inch choke; Danry Oil Co. No. 2 Hays, 720 feet, abandoned.

Bee County

Normanna field: J. R. Dougherty No. 1 fee, 3,676 feet, 27 bbls. pumping.

Caldwell County

Branyon field: Taylor Refining Co. No. 9-B Branyon, 2,111 feet, 42 bbls. pumping. Burdette field: Taylor Refining Co. No. 3 Punch, 2,050 feet, abandoned. Dale field: R. R. Ogden, 2,224 feet, 7 bbls. in 12 hours; R. R. Ogden No. 3 Dinges, 2,306 feet, 38 bbls. in 12 hours. Luling field: Murchinson Reed No. 2 Jennings, 2,096 feet, 30 bbls. per day pumping.

Duval County

Benavides field: Navarro Oil Co. No. 5 Owens, 4,785 feet, 120 bbls. three-sixteenths inch choke; Reynosa Oil Co. No. 8 Wilson, 4,789 feet, 146 bbls. three-sixteenths inch choke; Standard Oil Co. of Kansas, 4,794 feet, 83 bbls. three-sixteenths inch choke; Standard Oil Co. of Kansas, No. 5 Ross, 4,794 feet, 188 bbls. three-sixteenths inch choke. Charamousca field: N. V. Duncan's No. 16 Worden-Drought, 1,700 feet, 150 bbls. five-sixteenths inch choke; N. V. Duncan No. 17 Worden-Drought, 1,530 feet, 70 bbls. pumping. Labbe field: Magnolia Petroleum Co. No. 11 Labbe, 2,847 feet, 120 bbls. three-eighths choke. Lundell field: Government Wells Oil Corp. No. 12 Lundell, 1,513 feet, 36 bbls. one-fourth inch choke; Piedra Lumbre field: Magnolia Petroleum Co. No. 10 Duval County, 2,032 feet, 108 bbls. three-eighths inch choke.

Guadalupe County

Darst Creek field: Trio Oil Co. No. 3 Wille, 2,660 feet, initial production 105 bbls. 25 per cent salt water.

Jim Wells County

Premont field: Miss-Tex Oil Co. No. 7 J. J. O'Donnell, 2,337 feet, 50 bbls. oil and 50 bbls. of water, one-fourth inch choke.

Karnes County

South Burnell field: Luling Oil & Gas Co. No. 9 Boyce, 3,653 feet, 68 bbls. in 9½ hours through five-thirty seconds inch choke; Luling Oil & Gas Co. No. 13 Boyce, 3,654 feet, 205 bbls. three-sixteenths inch choke.

McMullen County

Ezzell field: Harry Ezzell No. 1-A Ezzell, 1,532 feet, 52 bbls. pumping; Harry Ezzell, 1,495 feet, 186 bbls. pumping; Harry Ezzell No. 1-C Ezzell, 1,510 feet, 500 bbls. pumping; Harry Ezzell No. 2-C Ezzell, 1,493 feet, 132 bbls. pumping; Parry and Delaney No. 1 Hill, 1,523 feet, 135 bbls. through one-fourth inch choke.

Refugio County

Refugio field: Houston Oil Co. No. 22 Heard, 4,921 feet, 260 bbls. three-sixteenths inch choke; Union Prod. Co. No. 19 Fannie Heard, 4,924 feet, 180 bbls. three-sixteenths inch choke. Tom O'Connor field: Hewitt and Daugherty No. 63 Lambert, 5,832 feet, 519 bbls. Quintana Petroleum Co. No. 22-C O'Connor, 5,925 feet, 184 bbls. nine-sixty fourths inch choke.

San Patricio County

Taft field: Humble Oil & Refining Co. No. 5 Flinn, 3,987 feet, 168 bbls. seven-sixteenths inch choke.

Starr County

Los Olmos field: St. Marys Oil & Gas Co. No. 60 Kelsey-Bass, 925 feet, abandoned. Ricaby field: Sun Oil Co. No. 5 Wardner, 2,369 feet, abandoned.

Webb County

Bruni field: O. W. Killam, 3,416 feet, 50 bbls. three-eighths inch choke. Killam field: Killam No. 2-B Garcia, 1,985 feet, IP 60 bbls. pumping; Eugene Mays No. 3 Dickens, 2,006 feet, 25 bbls. pumping.

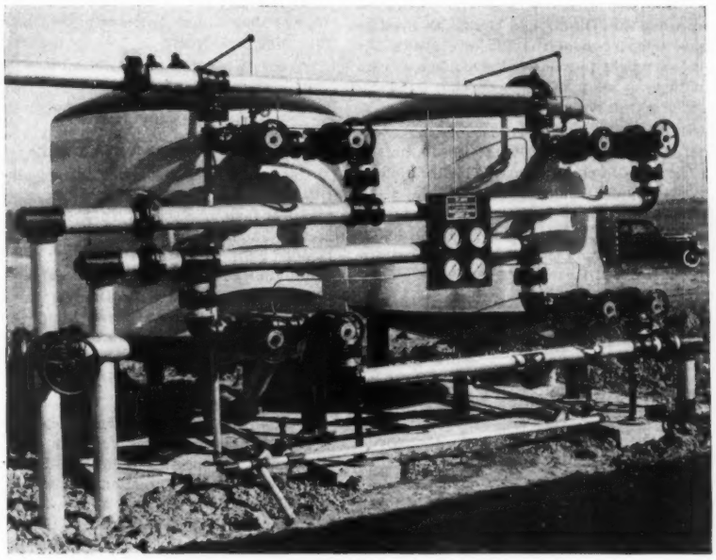
Nueces County

Flour Bluff field: Humble Oil & Refining Co. No. 3 Collier, 6,669 feet, 132 bbls. one-eighths inch choke; Humble Oil & Refining Co. No. 2 Smith, 6,650 feet, 81 bbls. in 4 hours, jetting with gas. Luby: Richardson Petroleum Co. No. 1 Cunningham, 5,306 feet perforated casing 4,014-18 feet, 20 bbls. distillate, 10 per cent salt

(Continued on Page 90)

The SCAIFE TYPE "S" FILTER for

OIL FIELD BRINE DISPOSAL
OIL FIELD REPRESSURING



Brine Disposal

To dispose of brine wastes into the sands of the earth, it is necessary to protect the sands from suspended matter, pipe line debris, etc. The disposal wells will not "plug," if the brine is properly filtered through a Scaife Type "S" Brine Disposal Filter. This filter is designed to withstand corrosion, does not contain dangerous electro-couples, and is free of cement underfillings. It is an ideal filter actually in use in many brine disposal systems.

Repressuring

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Michigan Field Report

By
O. C. PRESSPRICH

SECORD TOWNSHIP ATTRACTS MORE MICHIGAN OPERATORS

SAGINAW, Mich., Dec. 13.—While steady but uneventful development continued in Michigan's proved oil fields, operators began flocking into Secord Township (19n-1e) of Gladwin County to search for what they confidently believe will develop into an oil field rivaling the rich Buckeye Township (18n-1w) region, which, though less than a year old, has attained, even under rigid proration, a monthly production in the neighborhood of 750,000 bbls.

Attention began to turn a month ago to the Secord area when Roy Clovis brought in the township's first oil producer at a depth of 3,688 feet on the Abraham Bosley lease in section 11. The interest was greatly stimulated the past week when Sun Oil Co. and Mammoth Producing & Refining Corp., two of the Buckeye field's big operators, made outright purchase of a 1,250-acre tract of Secord's cutover lands and began staking out locations for a series of test wells.

Rig builders were completing derrick for No. 1 Zola Caplan, in the NE SE NE of section 10-19n-1e, as the first test on the Sun-Mammoth tract. The location is slightly more than a mile distant from the Bosley well. With roads that are poor at best, and with winter's heavy snows due to bury the territory in huge drifts, many troubles certainly are ahead of the drilling crews in the Secord district, but this is not expected to deter the pushing of operations.

Winter weather—with temperatures down near the zero line—was bringing its handicaps to other Michigan fields. Operations were slowing perceptibly in the prolific Buckeye field, and it recorded only a few new producers the past week, mostly in the southern end of the pool.

Of greatest importance of the week in the north Buckeye pool, where completions were scarce as operators marked time before bringing in their acidized efforts, was the successful development of Louis Rose No. 1 Brobine, NE NE SE section 9-18n-1w, which came in at 50 bbls. daily after acid. While considered minor as a producing well, its success as a western extension of a series of highly successful producers in section 10 was considered of importance.

Meanwhile western extension in the extreme north part of the north Buckeye field apparently was blocked when Mammoth Producing & Refining Co. No. 2 Wood, NE NE SE section 4-18n-1w, failed to rate commercially and was abandoned. The Mammoth well was a north offset to the first major extension test of Sun Oil Co. in that area. Other north pool wells either were testing after acid, or awaiting acid. Rowmor Corp. No. 2 Manyet, SE NW SE section 3-18n-1w, another north extension effort, continued to test after acid after recording a natural flow of 75 bbls. daily last week. Sun Oil Co. had three of its wells on the Mary Rabb lease shut in and scheduled for acid.

In the south Buckeye (Oard) pool, operators still are bringing in successful extension tests, which continue to unite the so-called midway sector with the south pool proper, and also are pushing the western boundaries of the south pool farther away from the discovery well.

Leading the south field efforts of the week was Bell & Mark No. 2 Armstrong, SE SE SW section 23-18n-1w, which gauged 250 bbls. after acid. The well is strictly a midway pool producer, and the best of several to date. It is three locations south of the Hanners-Armstrong "tattle-tale" well of the area.

Among the connecting links in a chain of producing wells joining the midway and south pools were two favorable producers. They included M. L. Jorgensen's No. 2 Foster, SE NE NW section 26-18n-1w, which was a 200-bbl. natural producer, and H. L. Smith's No. 3 Foster, NE NW SE section 26-18n-1w, which gauged 100 bbls. after acid.

C. L. McGuire No. 3 Havens, NW SW SW section 25-18n-1w, near the center of the south pool operations, was acidized with a resulting gauge of 150 bbls. daily. Rex Oil & Gas Co. No. 2 Arkwright, SE NW SE section 35-18n-1w, came in as a 100-bbl. natural producer. Of interest also in the south pool was the announcement that T. F. Caldwell No. 1 Hostetler, SE SE NE section 27-18n-1w—the western outpost well in the area—had completed a record-breaking fishing job and was drilling ahead. The test has been delayed several weeks by fishing for lost tools at 3,180 feet, and after unsuccessful attempts to hook the lost tools, operators succeeded in drilling past the handicap. When frist launched, the Caldwell test was strictly a wildcat, but during its delays development to the eastward has progressed so rapidly that it now becomes merely an offset to other favorable producers.

Truss Petroleum Co. No. 2 McMahon, NW SW NW section 25-18n-1w, flowed 250 bbls. daily after acid to add another successful well to the south pool.

Gladwin County

Interest in the prospective new Bentley field in Gladwin County centered the past week on developments at Chapman Oil Co. No. 1 State, C N half NW NW section 33-17n-2e, which was reported 106 feet in the Dundee with formations running 70 feet lower in structure. Indications were not favorable, with no show of either oil or water. The Dundee was logged at 3,467 feet. The test is located about 1 mile southeast of the Smart discovery well, a successful effort, which was confirmed by Durham & Jones' well, half a mile to the northeast of the Smart well, and producing about 200 bbls. daily.

Despite the apparent unfavorable appearance of the Chapman well, operators continue active in Bentley, with future prospecting indicated. Fortney Oil Co. No. 1 Smart, NE NE NE section 29-17n-2e, was scheduled to drill in this week, and McClanahan Oil Co. No. 1 Connely, NW NW SW section 35-17n-2e, was reported at 3,160 feet.

The second dry completion was chalked up for Sage Township, Gladwin County, this week when Charles E. McLaughlin No. 1 Simmons, SW SW SW section 28-19n-2w, came in dry in the Dundee. The other dry hole was D. E. Hughes No. 1 Cox, SE SE NE section 12-19n-2w, abandoned several weeks ago.

Allegan County

Failure was recorded last week for Ide Oil & Gas Co. No. 2 Brenner Estate, SW NE NE section 17-4n-13w, Salem Township, Allegan County, which was abandoned after finding the Traverse dry.

Arenac County

One dry hole in the Traverse and another abandoned effort featured development in the Adams field in Arenac County last week. McClanahan & Chapman No. 1-A Buffalo Land, SE SW NE section 20-19n-3e, was abandoned at 712 feet after finding formations very low, and B. A. Bartlett No. 1 Rambizz, NE NE NE section 35-19n-3e, was found a dry hole in the Traverse. This well, however, may go to deeper formations.

Isabella County

Cryden & Rowmor Corp. No. 1 Smith, SW SE NE section 35-15n-5w, Nottawa Township, Isabella County, was reported drilling ahead at 1,334 feet after it was found necessary to make a new hole, due to obstructions.

Two wells were completed as producers last week in Sherman Township, with several others due to reach pay soon. McClanahan Oil Co. No. 1 Terry, SE NW SE section 32-15n-6w, was acidized and flowed 200 bbls. daily, but settled to 150 bbls. Pure Oil Co. No. 6 Ryckman, C S half S half NE section 33-15n-6w, was completed for 225 bbls. natural.

Midland County

Hopes of an Edenville pool, Midland County, continued with reports from Sun Oil Co. No. 1-B State, C N half SE NE section 5-16n-1w, that it was taking acid nicely, and is scheduled for completion within a few days.

Pure Oil Co. No. 3-B Bond, C S half NE SE, section 12-13n-2w, Jasper Township, was acidized last week, and is producing 90 bbls. daily.

Charles W. Teater No. 1 Hitzman, NW NW SW section 13, Lee Township, was reported dry at 3,800 feet.

Ogemaw County

T. F. Caldwell No. 4 Roma, SE NW NW section 6-21n-3e, Mills Township, Ogemaw County, was ordered plugged and abandoned after finding the Traverse dry.

Roscommon County

One dry hole and progress an another development was reported from Higgins Township, Roscommon County, the heart of territory which last summer was the center of much leasing by operators. Franklin Petroleum Co. No. 1 St. Helen, SE SE SW section 26-23n-2w, was abandoned last week, while Maynard Smith, trustee, No. 1 Eggleston Ranch, C NW NW section 32-21n-2w, West Nestor Township, was reported drilling ahead of 2,000 feet with favorable formations. Both wells have been closely watched by operators interested in the area.

Saginaw County

After a third acid shot, Bond Oil Developing Co. No. 1 Schoenmaker, SE NE NE section 1-11n-1e, Lakefield Township, Saginaw County, produced 20 bbls. daily last week.

Tuscola County

The Thumb district in Kingston Township, Tuscola County, logged another failure in a further test effort to find the elusive pool which geologists believe courses somewhere underneath the district as a connecting link between the Petrolia, Ontario, pool and the Buckeye pool. It was Frank Norton No. 1 Voorhees, C NE NW section 8-12n-11e, and was logged as a failure.

Ottawa County

Western Michigan is looking forward to another Traverse stratum play with favorable indications at Lentz & Miller No. 1 A. Kok wildcat, NE NE SW section 29-5n-14w, Zeeland Township, Ottawa County, where casing has been finished and the hole is being deepened. Traces of oil have been found. The only other successful Traverse pool in production is the Allegan-Salem pool, also in western Michigan, though the Arenac-Adams pool in northeastern Michigan has made a Traverse showing.

November Production

Michigan produced more oil in the first 11 months of this year than in the whole of the best previous year, with indications the year-end will see the state's total output climb to 17,500,000 bbls. for 1937, with a value well over $20,000,000.

Figures announced by the Oil and Gas Association of Michigan—with one producer withholding the output of 29 of his producers from the tabulation—placed November production from the state's 17 oil fields, with their 1,738 producing wells, at a daily average of 52,406 bbls. for a month's total of 1,572,180 bbls. This was a drop from the September and October production, but pushed the 11-month total to 15,817,692 bbls., as against

(Continued on Page 81)

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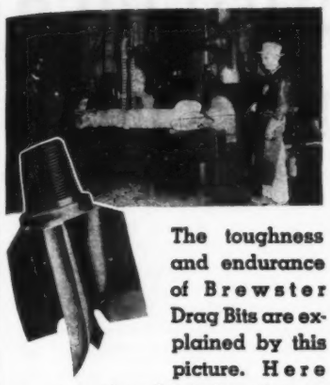

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Among Gulf Coast Drilling Contractors

This year is going on record as one of the most active ever experienced by drilling contractors on the Gulf Coast.

With few exceptions, contractors' rotaries have been kept busy consistently, and generally the demand for rigs has been greater than the supply. Consequently, idle time has been reduced to a minimum.

Although there has been some slackening of new work within the past several weeks on the part of some oil companies, contractors are of the opinion this is only a temporary, seasonal lull, and that after the first of the new year an increasing volume of work can be expected. As it is, the slackening of drilling so far has not put many contractors' outfits on the idle list.

Active development is expected to continue at least several months at such fields as Hastings, McCampbell, Heyser, Benavides and Saxet, on the Texas coast, and at Jennings, New Iberia and Hackberry on the Louisiana coast. In these fields, contractors' rigs have been used extensively. In addition, active development is expected to get under way soon at several of the newer fields. Several oil companies are making plans for more active wildcat programs, and on many of these tests contract rigs are expected to be used.

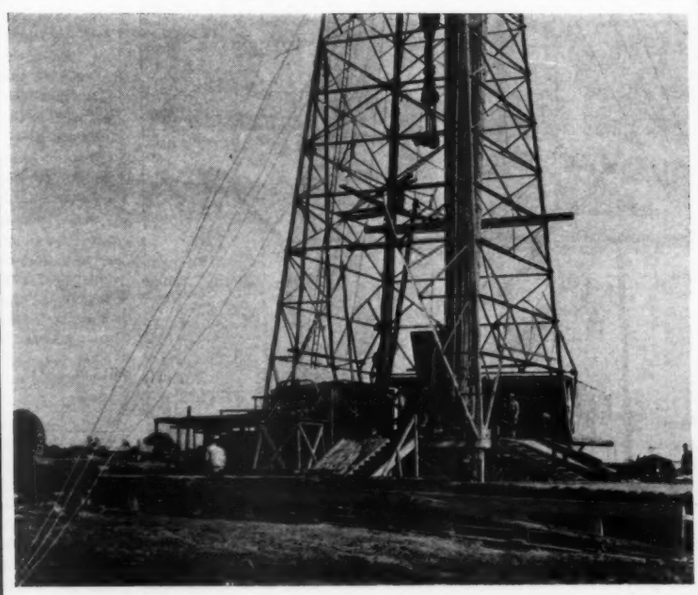
Of particular interest to contractors is the increasing attention being directed by oil companies to the drilling and development of prospects located in bays along the Texas coast and in the Gulf of Mexico proper. Companies have been increasingly active in leasing of these water beds, and drilling of these beds is expected to become an important phase of coastal operations the coming year. Hazards and difficulties attached to such operations demand the use of the heaviest and most efficient equipment, and the exertion of the greatest precautions to insure successful drilling and completion of wells. However, the rigs being operated by coastal drilling contractors represent some of the most adequate and complete equipment available, and are capable of meeting requirements expected to be placed on them.

Few important changes in locations of contractors' rigs were reported the past week. Moves were largely of a routine nature within fields where the rigs have been engaged in consistent development programs. Completions or abandonments of wildcat tests for the most part did not involve contractors' rigs.

Among the few wildcat developments, however, was the abandonment by Smith & McDannald of a test drilled 20 miles east of El Dorado, Ark., for Tide Water Oil Co. This test was dry after drilling to 7,200 feet. The well is shut down pending decision of the company whether to drill another test in that area. The same contractors completed a good well on the Levine tract in the Dickinson field, Galveston County, Texas, for Pure Oil Co. The rig has been moved to No. 3-B Sealey-Hutchinson, to be drilled for the same company.

Jack Frazier, discoverer of the Hardin field, Liberty County, is starting a deep wildcat on the Kelsey prospect, Upshur County, for Tom Hunter and American Liberty Oil Co. He has sublet the first 6,000 feet but will move his rig in when that depth is reached.

In the Tomball field, Humble No. 1 Fulton on potential gauged 21.16 bbls. of 52.8-gravity oil through one-quarter inch choke from 5,584 feet.



Running long string of casing in Coastal Louisiana wildcat

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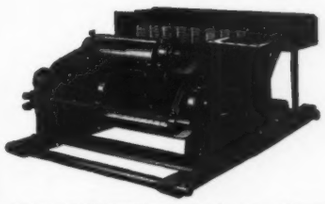

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North Louisiana, Arkansas

GOOD WELLS IN SCHULER'S TWO DEEP PERMIAN ZONES

By
GEORGE WEBER

SHREVEPORT, La., Dec. 13.—Schuler, Lisbon and the Jefferson and Miller County sectors of the Rodessa field gained developments which featured the week's activity in the Ark-La-Tex area. Numerous wildcats drilling in the district failed to furnish outstanding developments, due in most cases to the shallow depths at which some are still drilling. As they approach critical depths, considerable attention will be directed their way.

In Panola County, in the East Texas Border sector, Magnolia Petroleum Co. No. 2 E. A. Hull in the Thomas Applewhite Survey is retesting at 5,906-36 feet. The wildcat test is bottomed at 8,691 feet, having been plugged back to 6,085 feet and then to 5,950 feet.

Harrison County's important wildcat test, Arkansas Louisiana Gas Co. No. 1 C. M. Abney in the Waskon area, about 2½ miles southwest of production in that field, is drilling below 3,000 feet.

In north Louisiana, A. O. Olson No. 1 R. T. Sharp, a Caddo Parish test, one-half mile from distillate production in the Glen Rose, is acidizing at total depth of 5,624 feet, following a showing of gas. The semi-wildcat is in the Blanchard area. Seven-inch casing was set in the hole last week at 5,591 feet. Later reports show this test making an unestimated amount of gas and distillate.

The Farmersville wildcat, Joe Modisett No. 1 Frost Lumber Co. in Union Farish, is drilling in shale, red clay and white siltstone at 6,360 feet. This test will attract increasing attention as it goes deeper.

RODESSA COMPLETIONS
Miller County, Arkansas

The Miller County portion of the tristate Rodessa field is the outstanding center of activity in the field at the present time. With no proration limit on producers in that state, operators are actively adding wells each week. The voluntary proration of production by pipe lines serving the area has succeeded in bringing the total daily crude withdrawal to a point approaching the limit set by the Arkansas State Board of Conservation in its proposed field order which is expected to go into effect the first of the year. The area, however, gained another pipe line outlet during the week. A 2½-mile 4-inch line has been laid from a Layton Oil Co. lease in the field to a loading rack under construction on a spur supplied by the K.C.S. Railroad. The Layton interests have begun running oil to 44,000 bbls. of storage erected at the terminal, although it is reported no outlet has been acquired. Action of the Layton Oil Co. followed the concerted effort of the three pipe line companies originally purchasing all crude in the Miller County area, to cut the large withdrawal of oil by placing maximum daily purchases at 200 bbls. per well. The production in the Arkansas sector of Rodessa has been decreasing for the past several weeks, due to large part to the curtailed pipe line runs, and also to the fact that uncontrolled production since the field was opened has effected a decline in actual potential production due to drops in bottom-hole pressure.

Four producers were completed in the Miller County area in the past week.

McClanahan and others No. 1 Eason, S half NW SW section 12-20-28, was brought in for an initial of 7 bbls. per hour on open tubing, no tubing pressure, and a casing pressure of 500 pounds. The total depth of the test is 6,104 feet, and operators plan to acidize to increase production.

McMurray No. 1-A Thomas, NW NE NW section 13-20-28, made 40 bbls. per day with 6,000,000 feet of gas on a one-sixteenth inch choke, tubing pressure 900 pounds and casing pressure 1,000 pounds. The well was acidized with 3,500 gallons and is bottomed at 6,150 feet.

McMurray No. 1-B Thomas came in making 15 bbls. per hour on 2 3/64-inch chokes, with tubing pressure 200 pounds and casing pressure 400 pounds after acidizing with 2,000 gallons. Total depth is 6,141 feet.

Parks and others No. 1 Gerrald, in section 11-20-28, swabbed and flowed 90 bbls. per day on open tubing at a casing pressure of 700 pounds. The test, with 7-inch casing at 6,173 feet, showed dry last week, and flowed for a short time after perforating at 6,160-73 feet and acidizing.

Rodessa, Louisiana

The Caddo Parish portion of Rodessa gained four new wells during the week. Activity in this sector has slowed down perceptibly during the past several weeks, with the number of rigs decreased to 18 for the area.

Blackwell Oil & Gas Co. No. 3 Neugent, an old well drilled deeper from 6,074 feet, was brought in making an initial production of 66 bbls. per day of crude and 720,000 feet of gas. Gauge was made on an eighth-inch choke. Total depth was 6,750 feet, but the test was plugged back and completed at 6,025 feet in the Gloyd formation. Perforations were shot at 5,885-5,980 feet.

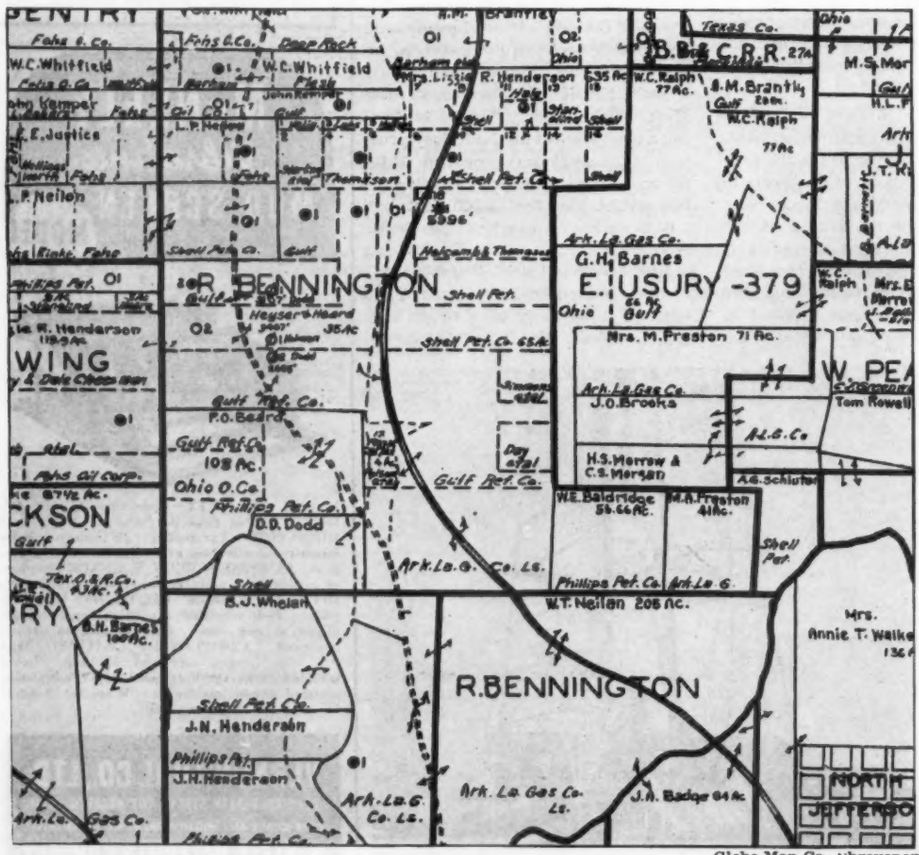
F. W. Burford No. 4 Terry, section 2-23-16, made 5,000,000 feet of gas and 50 bbls. per day of distillate on a 21/64-inch choke with tubing pressure of 1,175 pounds and casing pressure of 1,350 pounds. Total depth of the No. 4 Terry is 6,049 feet.

F. W. Burford No. 1 U. S. Govt., NE SE section 6-23-16, also a gasser, made 1,096,000 feet of gas and 4 bbls. per day of distillate on a 1-inch choke with no tubing pressure reported, and a casing pressure of 700 pounds. Total depth is 6,063 feet.

Union Production Co. No. 6 Starke, SW section 8-23-16, is making 7 bbls. per day on a quarter-inch choke with tubing pressure of 300 pounds and casing pressure of 700 pounds from total depth of 6,020 feet.

Jefferson Area

Although no completions were reported for the Jefferson extension to Rodessa in Marion County, Texas, a number of interesting tests were nearing that stage. Among the south end tests are Shell Petroleum Corp. and others No. 1 Henderson, Bennington Survey, which cored good saturation in the Gloyd, and is bottomed at 6,026 feet. A drill stem test showed a recovery of 90 feet of oil-cut mud in 10 minutes on quarter-inch chokes top and bottom. Seven-inch casing was set at 5,981 feet. This test is located on the north edge of production in the Jefferson section.



Globe Map Co., Shreveport

The Jefferson section of the Rodessa field, in Marion County, Texas, is gaining rapid development, with seven wells drilling in the extension area. Shell Petroleum Corp. and others are completing two wells in the Gloyd pay, one of which is a north edge test, and a number of other tests are in various stages of activity

Another Shell test, No. 1 Cooke, in the Bennington Survey, has also cored saturation in the Gloyd at 6,063-69 and 6,071-77 feet and has casing set at 6,044 feet for an early completion and extension of the production limits of the field. Total depth in the No. 1 Cooke is 6,084 feet.

Midway between the Lodi and Jefferson areas, in the Ina Hanks Survey, H. B. Turner and others No. 1 Scuddy is drilling below 5,100 feet. Another drilling well in the area is Shell Petroleum Corp. No. 1-B Henderson, in the Bennington Survey, making hole below 3,139 feet.

Estimated Daily Production

Estimated daily gross production all companies week ending December 10, 1937:

NORTH LOUISIANA

Bellevue	760
Caddo light	3,850
Caddo heavy	2,690
Converse	640
Cotton Valley heavy	340
Cotton Valley light	*3,830
De Soto and Red River	1,420
Elm Grove	380
Haynesville	3,050
Holly	115
Homer	2,465
Lisbon	3,635
Pleasant Hill	120
Rodessa	42,705
Sarepta-Carterville	300
Sligo	390
Sugar Creek	275
Urania	2,890
Zwolle	865
Total North Louisiana	70,720

SOUTH ARKANSAS

Champagnolle	1,290
El Dorado	1,890
Lisbon	285
Miller County	410
Nevada	725
Rodessa	9,505
Schuler	10,700
Smackover light	2,060
Smackover heavy	16,440
Stephens	565
Troy	1,140
Urbana	1,210
Total South Arkansas	46,220

*3,345 bbls. is distillate.
Texas side of Rodessa field, 18,435 bbls. daily.

Cass County, Rodessa

Union Production Co. No. 1 Carter and others, in the Holmes Survey, was completed during the week for an initial production of 458 bbls. per day through a quarter-inch choke. Tubing pressure was 550 pounds and casing pressure 1,000 pounds and total depth of the test is 6,110 feet.

Union Production Co. No. 3-A Starke, in the D. Gilliam Survey, came in for an initial of 143 bbls. per day on an eighth-inch choke with tubing pressure of 350 pounds and casing pressure of 950 pounds. Total depth of the well is 6,050 feet.

Lisbon Field

In Claiborne and Lincoln parishes, north Louisiana, the Lisbon field gained four new producers, all located in the Claiborne Parish. Lisbon production is still relatively low, due to the fact that pipe line takings were cut by the original purchaser in the field several weeks ago, and current purchases by that company and a second pipe line since extended to the field, do not equal the field allowable as placed by the Louisiana Department of Conservation.

Plans are definitely under way for the entry of a third pipe line to the field, which will give it an outlet either to the Ouachita River whence the crude will be barged down to New Orleans, or to a loading rack on the Louisiana & Arkansas Railroad, to be handled in tankcars to the same destination. An announcement of this project is due early in the coming week.

In the field, a half-mile extension was definitely made during the week by completion of the Crescent Drilling Co. on the Fowler farm, E half SW NW section 33-21-4. The well flowed oil last week, going dead after several days production, but was later placed on steady production. Its initial was reported at 100 bbls. per day on a half-inch choke with tubing pressure of 110 pounds and casing pressure of 500 pounds. Total depth of the well is 5,285 feet.

A. O. Olson No. 1 English, in E half SE SE section 29-21-4, was completed for 15 bbls. per hour through open tubing with tubing pressure of 100 pounds and total depth of 5,204 feet.

The best well in the field came in early this week on the M. S. Patton Estate lease of the Sloan & Zook Co. The test, No. 1, located in the E half SE NW

(Continued on Page 78)

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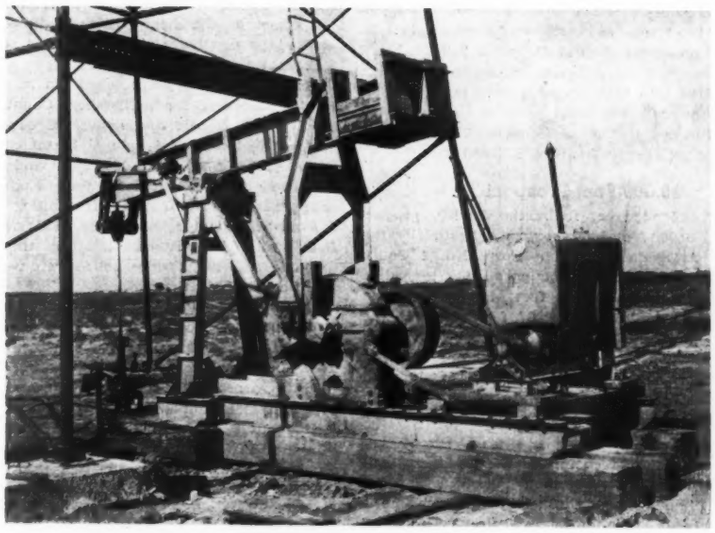

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Texas and Louisiana Gulf

PROSPECTIVE NEW WELLS IN SOUTHERN LOUISIANA FIELDS

By
NEIL WILLIAMS

HOUSTON, Tex., Dec. 13.—Interest along the Gulf Coast district is centered in the southern Louisiana sector, where production tests are under way at two wildcats and another cored several feet of oil sand in a 10,000-foot horizon.

At the Woodlawn Prospect, Jefferson Davis Parish, Union Sulphur Co. was preparing to test No. 1 Calcasieu National Bank, following the running of a Schlumberger survey, which showed favorable possibilities. Bottomed at 8,524 feet with 7-inch casing on bottom, perforations were scheduled to be made at 8,293-97 feet. Several cores cut at intervals from 8,022 feet to the total depth showed oil and gas. The well is in section 12-9s-6w, on a block of 5,000 acres, obtained from the Magnolia Petroleum Co. on a farm-out.

The first production test at D. and D. Oil Co. No. 2 Lutcher Moore, North Strake Prospect, Calcasieu Parish, resulted in a recovery of gas-cut mud and salt water, and the hole has been plugged back to 8,400 feet where another test is to be made. The first test was made through perforations at 8,550-60 feet.

10,000-Foot Prospect

In the Raceland area, Lafourche Parish, production from a 10,000-foot horizon was indicated by the showing of Amerada Petroleum Corp. No. 1 South Coast Corp. A sand section showing oil was topped at 10,182 feet and a total of 28 feet of sand, showing oil, was recovered at 10,189-10,207 feet. Late in the week the hole was coring ahead in shale below 10,209 feet. A volumetric test of the cores showed 4.3 per cent saturation. The well is in section 34-15s-19e and has also cored sand showing oil at intervals from 7,239 to 7,279 feet, but no drill stem test was ever attempted.

Continental Oil Co. recompleted the discovery well in the Abbeville field, Vermilion Parish, as an oil well. On a 24-hour gauge through a 5/36-inch choke the well flowed 297 bbls. of 42-gravity oil with tubing pressure 500 pounds and casing pressure 1,400 pounds. This well was originally completed as a distillate producer at 7,666-75 feet and was recompleted at 7,893-97 feet, the approximate depth from which the company's second well was completed for a large oiler several weeks ago.

At the Wax Lake Prospect, St. Mary Parish, Texas Co. No. 1 State Bateman Lake, section 21-16s-12e, perforated casing at 10,978-85 feet and on a 35-minute drill stem test showed 4,300 feet of salt water. The perforations have been squeezed off and another test will be made. This hole reached a depth of 11,808 feet, where mechanical trouble developed, resulting in the hole being plugged back. The next test is expected to be made around 9,600 feet, where favorable indications were shown on a Schlumberger survey.

West of the discovery well in the South Jennings field, Jefferson Davis Parish, Loffland Brothers No. 1 Isaac Fontenot, was reperforated at 8,880-90 feet, and the well is being washed in. A recovery of salt water along with several hundred feet of pipe line oil on a previous drill stem test has encouraged prospects of commercial production for this field which was originally discovered as a distillate pool.

Offshore from the Cameron Parish line, Superior Oil Producing Co. No. 1 State, in the Gulf of Mexico, is bottomed at a total depth of 7,166 feet and a string of 7⅝-inch casing was being run. It is reported that the casing will be run as a protection string and the hole will be carried deeper before a test is made of a 70-foot sand section at 5,110-80 feet.

Texas Coastal Fields

Along the Texas Coast and located about a half mile southeast of production at Segno, southern Polk County, H. H. Weinert and others were testing No. 1 J. B. Hooks, bottomed at 5,400 feet. Casing was cemented on bottom and the well was being tested through perforations at 5,332-33 feet. It is about a half mile east of Humble Oil & Refining Co.'s 5,300-foot production and about the same distance northeast of Gulf Oil Corp. No. 8 Wing, recently completed producer from a new sand at 6,261 feet.

A 3,000-foot east extension to the Anahuac field, Chambers County, was recorded with the completion of Humble Oil & Refining Co. No. 2-C Middleton which flowed 296 bbls. per day through a quarter-inch choke from a screen setting at 7,120-33 feet. The well is separated from the main field by a dry hole, and may result in a general drilling campaign around the outter edges of the field, which has been fairly well defined by dry holes. The well is in section 58, H.& T.C. Survey.

Production tests were scheduled in two deep tests in the Seabreeze field, Chambers County, by Sun Oil Co. No. 2-A Hebert and Broussard cored oil sand at 8,463-90 feet, and the hole is bottomed in sand and shale showing oil at 8,490 feet, and 7-inch casing has been cemented at 8,467 feet. No. 1 Hoffman, a south offset to No. 3 Acom, is running screen to test a sand section at 8,422-65 feet. This was a distillate field until the recent completion of the first oil well, and the showing of the above two wells indicate a prolific field is in the making.

In the Call field, Newton County, Houston Oil Co. and Republic Production Co. are pulling screen to reset in No. 2 Sabine Tram, when the well quit after a 12-hour flowing period. Up to the time the well died it was flowing pipe line oil and wash water. The hole is bottomed in a new sand at 7,105-23 feet. It is about 2,100 feet southwest of the discovery well in the H.&T.C. Survey No. 37. Derrick is being built for No. 3 Sabine Tram, 933 feet north and west of No. 2, in section 57, H.&T.C. Survey.

Two wildcats in Jackson County were being watched with interest. In the Mauritz area, Sam G. Harrison No. 1 H. A. Meyer is coring in shale with a slight odor of oil and gas below 5,352 feet. Sand with a good odor of oil and gas is reported to have been found at intervals from 5,092 to 5,101 feet, and two fruitless drill stem tests were attempted. The well is about midway between the Mauritz and Ganado fields in the M. L. York Survey. In the LaWard area, Hargrove and others were scheduled to test No. 1 Hodges. Casing was cemented at 5,400 feet and a test will be made in the sand section at 5,092-5,101 feet.

Hardin Field Expands

Activity in the Hardin field, Liberty County, is expected to spread as more wells reach the pay horizon. In the extreme southern part of the field, Strake Petroleum Co. No. 2 Finley flowed 146 bbls. of 55-gravity oil on a 24-hour potential test through a quarter-inch choke, with tubing pressure 950 pounds and casing pressure 2,400 pounds. Production was obtained from perforations at 7,542-46 feet. His No. 3 Finley a south offset to No. 1 is bottomed in sand at 7,560 feet and casing is being run for a test. McAlester Fuel Oil Co. No. 1 Hinson, H. B. Johnson Survey, is being tested at a total depth of 7,615 feet. Humble Oil & Refining Co. No. 1 Myrtle Chambers topped sand at 7,575 feet and the hole is bottomed at 7,591 feet and casing is being cemented.

Prospects of commercial production from the shallow Miocene sand in the Clinton field, Harris County, were not bright as Stanolind Oil & Gas Co. continues to have trouble in getting No. 1 Oates to flow. Bottomed in very fine sand at 3,835 feet, the well began to clean itself last week, when first tested, but died shortly afterward and all attempts to revive it have failed. It was swabbed into the pits showing 80 per cent oil and 20 per cent brackish water. After standing for 12 hours, it swabbed 65 per cent fresh water and 35 per cent oil. The operators are installing flow valves.

Salt Water Retards

Salt water continues to retard the completion of Merit Oil Co. No. 1 Wright, a wildcat on the Cedar Bayou Prospect. On the last 24-hour gauge, it flowed 128 bbls. of pipe line oil, plus 70 per cent salt water, through a half-inch choke, with tubing pressure 70 pounds and casing pressure 850 pounds. A cement retainer was set at 6,413 feet and the perforations squeezed off. Whether or not this test proves to be a commercial well, it definitely proves the structure and will result in future development.

COMPLETIONS TEXAS COAST

Brazoria County

Damon Mound field: Sinclair Prairie Oil Co. No. 26 E. H. Jackons, total depth 2,662 feet, 29 bbls. per day, pumping. Hastings field: Humble Oil & Refining Co. No. 3 J. E. Alexander, 6,080 feet, 657 bbls. per day, quarter-inch choke; Humble Oil & Refining Co. No. 3 W. L. McDeed, 6,080 feet, 621 bbls. per day, quarter-inch choke; Stanolind Oil & Gas Co., 5,460 feet, 623 bbls. per day, quarter-inch choke; Stanolind Oil & Gas Co. No. 2-A C. D. Brown, 6,155 feet, dry and abandoned; Stanolind Oil & Gas Co. No. 23-B Curkett, 591 bbls. per day, quarter-inch choke. Sandy Point: Henry DeArman No. 1 Edmundson, 6,555 feet, dry and abandoned; J. F. Driscoll No. 1 J. W. Fullet, abandoned location.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 19-S J. J. Clark, 7,085 feet, 676 bbls. per day, quarter-inch choke; Humble Oil & Refining Co. No. 2-C Middleton, 7,133 feet, 296 bbls. per day, quarter-inch choke; Humble Oil & Refining Co. No. 6 Zappe, 7,085 feet, 665 bbls. per day, quarter-inch choke. Turtle Bay field: Sun Oil Co. No. 7 Chambers, 6,612 feet, 510 bbls. per day, quarter-inch choke.

Galveston County

Dickinson field: Frank Bennett, 8,126 feet, 551 bbls. per day, quarter-inch choke; Humble Oil & Refining Co. No. 1 Kilgore, 780 bbls. per day, quarter-inch choke. High Island field: Stanolind Oil & Gas Co. No. 63 Cade, perforated casing 5,060-5,120 feet, 52 bbls. per day pumping.

Hardin County

Silsbee field: Republic Production Co.-Houston Oil Co. No. 24 Brooks, 6,907 feet, 350 bbls. per day, quarter-inch choke; Republic Production Co.-Houston Oil Co. No. 25 Brooks, 6,940 feet, 582 bbls. per day, quarter-inch choke.

Harris County

Friendswood field: Humble Oil & Refining Co. No. 1 Gail Whitcomb and others, 6,175 feet, abandoned; National Standard Oil Co. No. 1 Willie Coward, abandoned location. Tomball field: Humble Oil & Refining Co. No. 1 J. B. Fulton, 5,584 feet, 6 bbls. per day, quarter-inch choke.

Liberty County

Esperson field: General Crude Oil Co. No. 36 Esperson, 4,265 feet, 214 bbls. per day, quarter-inch choke. Hardin field: Woodley Petroleum Co. No. 4 McMurtry, 7,597 feet, perforated casing 7,590-95 feet, 568 bbls. per day, quarter-inch choke.

Jefferson County

Amelia field: Stanolind Oil & Gas Co. No. 2 J. W.

(Continued on Page 78)

West and North Texas

By MITCHELL TUCKER

77 COMPLETIONS, 59 NEW LOCATIONS IN WEST TEXAS

FORT WORTH, Tex., Dec. 13.—A very active week just closed in the West Texas Basin, and the North Texas, and West Central portion of Texas. Outstanding among the West Texas developments was the fact that 77 completions were recorded, and 50 new locations announced. Of the 77 completions, 12 were dry holes at wildcat tests or on the edge of producing structures. Of the 50 new locations, 8 were for deep wildcat tests, 1 each in Andrews, Gaines, Hockley, Howard, Menard, Reeves, Stonewall and Ward counties. Of the 65 completions within proven areas, 6 were in the Goldsmith field; 8 in the North Cowden field; 10 in the McCamey field; 4 at Grand Falls; 6 in the Hathaway field; and 4 in the Kermit field of Winkler County.

Harper Field Extension

Perhaps foremost in the West Texas completions was the 1¼-mile western extension given the Harper field of Ector County. On official gauge, Fred Turner, Jr., No. 1-A J. E. Parker pumped and flowed 570 bbls. daily after being shot, from sand drilled 4,080 to 4,317 feet, total depth. This favorable sand section and productivity of the western outpost is expected to stimulate activity in the Harper area.

Indicating a possible connection between the Denver pool of Yoakum County and the Wasson field in northwest Gaines County, the American Liberty Oil Co. No. 1 C. A. Thomas, wildcat test about midway between the two producing areas, is being closely watched as preparations are being made to test. At a total depth of 5,026 feet, oil level rose to 1,500 feet from top and could not be lowered by bailing. Tubing has been run preparatory to pumping test which will be made early next week.

Pecos Wildcats

The shallow producing area opened last week in north Pecos County by C. C. Dorr and others No. 1 Payton, H.&T.C. Survey, immediately appears to have a northern 1-mile extension. Hoss and Downey No. 1 Cities Service, same survey, topped the broken pay at 1,975 feet and drilled to a depth of 1,978 feet before reaming to bottom in preparation to run casing. The discovery well, Dorr and others No. 1 Payton, flowed 39 bbls. of 37.2-gravity oil in 24 hours for completion at its total depth 2,037 feet. Neither well has been acidized or shot. This new producing area is about 4 miles southeast of the Netterville pool and 8 miles northwest of the Pecos Valley field.

Magnolia Petroleum Co. No. 1-A McKee, important Ordovician wildcat in the Imperial area of northern Pecos County, which topped lower markers at unusually high points, continues to be closely watched. The well cleaned itself with gas from upper zones after being opened following a two weeks' shut in. The hole is uncased below 178 feet, and operators are circulating through drill pipe near bottom to prevent cavings. Drilling operations will not be resumed for about two weeks, it is reported.

West Texas Abandonments

Four important wildcats in the Basin area of western Texas were abandoned last week as dry. In Gaines County, Mitchell and Sullivan No. 1 Shell, C.C.S.D.&R. G.N.G. Survey, about 8 miles southwest of Wasson production, was abandoned at a total depth of 5,302 feet without encountering the Permian lime. Amerada Petroleum Corp. No. 1 Neil, T.&P. Survey, of Glasscock County, was abandoned as dry at about 3,500 feet. In Martin County, J. L. Green and others No. 1 O. B. Holt, Garza County School Lands, dry at 4,750 feet. Magnolia Petroleum Co. Ward County test in the G.M. M.B.&A. Survey, No. 1-79 Sealey, was abandoned as dry at a depth of 4,155 feet.

NORTH TEXAS

As the deep sand area of the K.M.A. field in southern Wichita County continues to spread in all directions, this spot definitely becomes one of the "hottest" in the Mid-Continent. As the week closed there were 27 locations rigging up and 36 drilling, all having the 3,800-4,000-foot horizon as their objective.

Outstanding among the weekly completions was the 1-mile extension westward, crossing the line into Archer County. Consolidated Oil Co. No. 1 W. P. Ferguson, W. H. Spillers Survey, topped the true sand at 3,706 feet and after taking 27 feet of penetration began flowing by heads at the rate of 60 bbls. per hour with 700 pounds gas pressure. The pay section at K.M.A. has been found to vary in different parts of the field from a partial lime to a sandy lime, and on the western side into a true sand. Potential extension wells in all directions from this rapidly developing field are in the stage of completion, and next week should prove a very important one to operators in the Wichita Falls district.

WEST CENTRAL TEXAS

Avoca Field

The probable 5-mile extension well of the Avoca field to the northeast is to be tested, after a two weeks' delay while curing titles. The Owens-Snebold and others No. 1 H. B. Haterius, NE cor. section 163, B.B.B.&C. Survey, 1 mile east of the Jones-Shackelford County line in Shackelford County, is the possible 5-mile extensioner. After taking penetration into the saturated Palo Pinto lime to a total depth of 3,212 feet, 6-inch casing has been cemented at 3,208 feet. The well headed and made several flows while running casing. Unconfirmed reports are to the effect that the Owens-Snebold interests are selling their holdings in this extension block, causing the delay in bringing the well in.

Rotan Field

On the northwest edge of the Rotan pool of Fisher County, Sunray Oil Co. No. 7 Robinson failed to find saturation in the Noodle Creek lime (pay section in other Rotan producers) and operators are drilling below 3,700 feet in order to test possibilities of lower beds on the flank of the Rotan structure. As a south offset to this well, Sunray Oil Co. completed its No. 5 Robinson, pumping 656 bbls. in 24 hours after acidizing, 3,554-63 feet.

Jack County Wildcat

A wildcat location has been staked in central western Jack County, about 2½ miles east of Jermyn. It is G. M. Gillespie No. 1 Street, T.E.&L. Survey, and will be drilled with cable tools to test shallow sands at 300 and 800 feet, and the Strawn series with possible pays from 2,700 to 3,250 feet. Contract depth is 3,300 feet.

TEXAS PANHANDLE

For the past seven-day period 24 oil wells and three gas producers were completed in the Panhandle district, the oil wells having a daily aggregate potential of about 12,000 bbls., and the gas wells a total volume of 115,000,000 feet. Three oil completions were in Carson County, 10 in Gray County, and 11 in Hutchinson County. At present there are 3,644 oil producing wells in the Panhandle district, with a daily output of about 70,000 bbls. daily, an average of slightly less than 20 bbls. per well per day.

In the extreme southeast corner of Gray County, Stokley and Savage are preparing to make the area's first deep test at their No. 1 Beigel, section 63, Block 23, G.&G.N. Survey, about 2½ miles east of McLean, Tex.

PANHANDLE COMPLETIONS

Carson County

Cities Service No. 3 Simms "A," 3,280-3,300 feet, 189 bbls. Magnolia Petroleum Co. No. 31 fee, 2,219-3,064 feet, 345 bbls. Texas Co. No. 8 Boney, 3,020-3,100 feet, 420 bbls. Texoma Natural Gas Co. No. 1-E J. M. Mauldin, 2,514-2,680 feet, 48,978,000 feet of gas. Timms-Dietsch No. 3 Jordan-Brown, 3,063-97 feet, 133 bbls.

Gray County

Cities Service No. 13 Hughey "B," 3,214-80 feet, 555 bbls. F. W. Dye and others No. 3 Meers "A," 3,130-3,235 feet, 586 bbls. W. C. Jones No. 8 Culler, 3,188-3,287 feet, 613 bbls. Magnolia Petroleum Co. No. 18 fee, 2,838-43 feet, 314 bbls. Stanolind Oil & Gas Co. No. 8 Kinzer, 3,270-3,305 feet, 389 bbls. Texas Co. No. 7 Short, 2,925-3,020 feet, 617 bbls. Drilling & Exploration Co. No. 7 Leopold, 3,235-3,301 feet, 455 bbls. Gulf Oil Corp. No. 10 Faulkner "A," 2,835-2,946 feet, 302 bbls. Shamrock Oil & Gas Corp. No. 5 Saunders-Big Gray, 3,068-3,100 feet, 795 bbls. Stanolind Oil & Gas Co. No. 4 Hood, 2,930-3,033 feet, 448 bbls.

Hutchinson County

J. E. Crosbie, Inc., No. 20 Pitts, 2,950-3,015 feet, 834 bbls. Stanolind Oil & Gas Co. No. 15 Watkins "A," 2,858-2,915 feet, 392 bbls. Drilling & Exploration Co. No. 13 Watkins, 2,890-2,951 feet, 433 bbls. Magnolia Petroleum Co. No. 2 Herring, 2,790-2,825 feet, 15 bbls. of oil and 8,000,000 feet of gas. Rayden Oil Co. No. 3 Ed Mayer, 3,055-3,125 feet, 843 bbls. Stanolind Oil & Gas Co. No. 11 Moore, 3,045-3,126 feet, 344 bbls. Stayton Oil Co. No. 15 Moore "C," 3,105-81 feet, 488 bbls. Travelers Oil Co. No. 4 Haile "B," 2,983-3,056 feet, 826 bbls. Turman Oil Co. and Plains Petroleum Co. No. 15 Whittenburgh, 2,890-2,950 feet, 733 bbls.; No. 8 Whittenburgh, 2,654-2,734 feet, 728 bbls.

Moore County

Magnolia Petroleum Co. No. 6 Britain, 2,767-3,460 feet, 30,557,000 feet of gas. Continental Oil Co. No. 1 Bush estate, 2,720-3,260 feet, 35,728,000 feet of gas.

WEST TEXAS COMPLETIONS

West Texas completions, sand records and initial daily production were as follows:

Crane County

Mead Production No. 2-D Cowden, McCamey area, 2,405-2,575 feet, pumped 318 bbls. Quality Production Co. No. 1 Gibbs, McCamey area, 2,315-25 feet, pumped 942 bbls. Gulf Oil Corp. No. 164 McElroy, McElroy area, 2,794-3,012 feet, pumped 197 bbls.

Ector County

In the Connell area, Rushwold No. 1-B Connell, 3,410-3,650 feet, 472 bbls.; Ohio No. 3 University, 3,470-3,660 feet, pumped 41 bbls.; E. E. Fogelson No. 2-A University, 3,425-3,721 feet, 535 bbls.

In the Foster area, Cities Service No. 4 Bagley, 4,163-4,266 feet, 678 bbls.; Texas Pacific Coal & Oil No. 2 Foster, 4,000-4,200 feet, 670 bbls.

In the Goldsmith area, Magnolia No. 1 Slater, 4,190-4,280 feet, 1,370 bbls.; Texas Pacific Coal & Oil No. 11 Scharbauer, 4,200-4,275 feet, 1,317 bbls.; Gulf Oil Corp. No. 53 Goldsmith, 4,142-4,220 feet, 2,992 bbls.; Ohio No. 2 Cummins, 4,160-4,201 feet, 1,203 bbls.; Humble Oil & Refining Co. No. 3-B W. F. Cowden, 4,145-90 feet, 1,453 bbls. per day; Shell Oil Co. No. 3 Slater, 4,130-4,278 feet, 735 bbls. per day.

In the north Cowden area, Stanolind Oil & Gas Co. No. 63 Cowden, 3,952-4,249 feet, 565 bbls. per day; Stanolind Oil & Gas Co. No. 8 Roberts, 4,111-4,330 feet, 733 bbls.; Stanolind Oil & Gas Co. No. 64 J. M. Cowden, 4,067-4,276 feet, 564 bbls.; Sunray Oil Co. and York & Harper No. 1 Bagley, 4,170-4,360 feet, 427 bbls. Barnsdall No. 1 E. Cowden, 3,972-4,250 feet, 613 bbls.; Superior Oil Co.

(Continued on Page 81)

Oklahoma Operations

By
DAL DALRYMPLE

CENTRAHOMA WELL TO PLUG BACK, TEST LIME SHOWING

The third attempt to find deep oil production in the Centrahoma area of Coal County was unsuccessful the past week when Carter Oil Co. and others No. 1 Claytor. C W half NE SW section 27-2n-9, found salt water at 6,722 feet, total depth. On drill stem test, 190 feet of salt water and some mud was recovered, with no oil showing. Operators were to plug back to 6,475 feet and test showings in upper horizons. Hunton lime was topped at 5,709 feet with a showing of oil at 5,903-08 feet, and Viola lime was found at 6,008 feet, with oil and gas showing at 6,066-76 feet. It also had showings of oil and gas in Cromwell sand at 4,741-50 feet. Carter Oil Co. and others No. 1 Thompson, in section 34-2n-9, one of the other deep tests drilled near Centrahoma, was completed as a small producer after plugging back, and Shell Petroleum Corp.'s deep test in section 30-3n-10, was a failure.

Additional efforts to make a producer at Gulf Oil Corp. No. 1 Johnson, C SW NW section 27-2s-3w, Fox field, Carter County, were expected to be made this week. It was cored to 7,970 feet, total depth, the past week after previous efforts to make it produce had failed. It passed out of Oolitic lime, the formation in which deep production in the area was discovered at 7,955 feet. Operators planned to run tubing and may acidize. Same operator's No. 1 Smith, C SW SW section 26-2s-3w, set pipe at 7,673 feet in Oolitic lime, total depth 7,773 feet, and was preparing to drill plugs. A third deep test in Carter County, Carter Oil Co. No. 1 Harley, C NW NW section 19-2s-3w, Milroy area, was drilling below 4,930 feet.

A Wilcox sand test in Bryan County is scheduled to be started soon at Southern Oil Co. No. 1 Henry, NW NW NE section 10-8s-7e, southwest of Durant. Geology was worked by William J. Nolte, now with Stanolind Oil & Gas Co. in Texas. Top of the Simpson series is expected at 4,000 to 4,200 feet.

W. A. Delaney, Ada operator, has filed intention to drill a wildcat south of Noble in Cleveland County, at No. 1 Bugher, SE SE SW section 12-7-2w, on the Nemaha trend.

Four wildcats were expected to be active in Jackson County, in southwestern Oklahoma, by the end of the year. H. B. Sears and E. L. Lippert of Oklahoma City were reported to have arranged for the deepening of a pair of shut-down tests and for two other wildcats to be drilled. Their No. 1 Booker, NW cor. section 33-2n-18w, near Headrick, will be deepened from 1,031 feet, where it has been shut down for several months, and the Lippert and others No. 1 Howard, NW SW NW section 10-3n-19w, northeast of Altus, will be deepened from 955 feet. Location for the two new tests were announced as NW SE SE section 36-2n-19w, south of Headrick, and No. 1 Zinn, SW SE NE section 15-4n-19w, near the Kiowa County line.

Another Cleveland County wildcat was due to start at Harry Hollenback No. 1 Mantooth, NW cor. section 24-6-1e, east of Lexington. It is to be a Wilcox sand test. Location is on an Indian Territory Illuminating Oil Co. farm-out, with major oil companies holding nearby acreage and royalty.

Wildcat Completions

A wildcat that opened a new gas area in Texas County, in the Oklahoma Panhandle, recently, was completed the past week. It was Hagy, Harrington & Marsh No. 1 Becker, C NE section 4-1n-13ecm. It was bottomed at 3,010 feet, salt water intruded and it was plugged back to 2,900 feet. After shooting at 2,817-2,900 feet, it produced 8,750,000 feet of gas. It is near the town of Goodwell and southwest of Guymon.

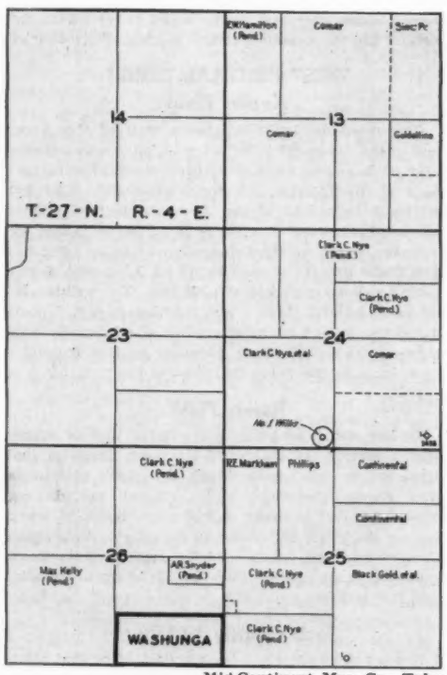
W. C. McBride, Inc., No. 1 Jackson, NE NE SW section 16-6-7, wildcat in Seminole County, was dry and abandoned at 1,813 feet, total depth. Senora formation was found at 1,720 feet.

Earl Halliburton and others No. 1 Bagwell, SW NE NE section 30-3s-15, wildcat in southwestern Pushmataha County, was temporarily abandoned at 6,010 feet, total depth, in Stanley formation, but the hole was not plugged.

Seminole County

Malarnee & Shelton No. 2 Huddleston, SE SW NE section 32-7-6, Dora area, Seminole County, had Boggy sand at 2,932 feet, total depth 2,994 feet, plugged back to 2,990 feet, swabbed 42 bbbls. of oil in 24 hours, was shot and flowed 405 bbls. of oil in 24 hours, through casing.

J. F. Smith No. 1 Harryman, NE SW SW section 33-7-6, had Boggy sand at 2,827-60 feet, total depth,



Mid-Continent Map Co., Tulsa

Clark C. Nye and others No. 1 Willis, section 24-27-4e, is a new wildcat in eastern Kay County, west of the Burbank field

and flowed 330 bbls. of 37.6-gravity oil in 24 hours, with 2,500,000 feet of gas.

Manahan & Moore No. 3 Williams, SW SW NE section 22-6-6, was bottomed at 2,324 feet, shot at 2,317-22 feet, and flowed 104 bbls. of oil in 24 hours, cutting 1 per cent salt water. Boggy sand was topped at 2,311 feet.

Amerada Petroleum Corp. and others No. 2 McGill, NE SW SW, section 35-11-5, North Earlsboro pool, found Wilcox sand at 4,624 feet, total depth 4,636 feet, swabbed 289 bbls. of oil in six hours and 15 minutes and was completed for estimated potential of 1,104 bbls. of oil.

Louisiana Refining Co. No. 6 Reed, NW NE NE section 18-5-8, an old well, was plugged back from 4,177 feet to 4,147 feet, was acidized and pumped 400 bbls of oil in the first 24 hours, recompleted.

W. C. McBride, Inc., No. 1 Sturgeon, SW NE SW section 20-6-7, was an abandoned location.

New work in Seminole County: J. J. Deaner No. 1 Sinder, NE cor. section 5-6-6, building rig; Sinclair Prairie Oil Co. No. 1 Tennison, SE SE NW section 22-6-6, location; Commercial Drilling Co. No. 2 Huddleston, SW SW NE section 32-7-6, location; Irvan Wilson and others No. 1 Wright, NE SW SE section 32-7-6, cellar and pits; D. Malarnee No. 2 Swan, SW NE SW section 33-7-6, location; same operator's No. 1 Shelton, SE NW SW section 33-7-6, location; same operator's No. 2 Shelton, NW SW NW section 33-7-6, location.

Pontotoc County

Magnolia Petroleum Co. No. 5 Norris, SE NE NE section 21-2n-7, Fitts district, Pontotoc County, found Hunton lime at 3,874 feet, total depth 3,880 feet, and made potential of 1,859 bbls. of oil. Gas gauged 3,800,000 feet.

E. H. Moore No. 2 Muse, SE NE SE section 33-2-7, flowed 677 bbls. of oil net in 15 hours after acidizing, and was completed at 4,222 feet, total depth. Top of Hunton lime was 3,910 feet, Sylvan shale 4,220 feet. Gas gauged 4,600,000 feet.

Francis Oil & Gas Co. No. 2 Provence, NW cor. section 2-1n-7, Jesse sector, was temporarily abandoned but not plugged at 1,910 feet, total depth.

Barbara Oil Co. No. 4 Chapman, SE SE SW section 25-5-7, topped Gilcrease sand at 2,258 feet, pay 2,303 feet, total depth 2,327 feet in sand, swabbed 65 bbls. of oil in four hours and pumped 55 bbls. in 24 hours. Gravity of the oil was 36 degrees.

First reports of new work in Pontotoc County: Mid-Continent Petroleum Corp. No. 12 Statler, C N half N half SW section 2-1n-7, building rig; Continental Oil Co. No. 5 Thompson, SW SW NE section 2-1n-7, cellar and pits; King & Skirvin No. 1 fee, NW SE SW section 11-4-6, total depth 610 feet, fishing for bailer; Magnolia Petroleum Co. No. 3 Reed, NE SW NE section 26-5-7, cellar and pits.

Noble County

Champlin Refining Co. No. 1 Gasaway, NE NE NW section 28-23-2w, south end of the Billings area, Noble County, found Wilcox sand at 4,364 feet, total depth 4,366 feet, plugged back to 4,363½ feet and pumped 318 bbls. of oil and 500 bbls. of water through tubing, completed.

R. E. Eckels No. 1 Guthrie, SW NW SE section 31-21-2w, was an abandoned location.

Logan County

Incorporated Petroleum Producers and others No. 4 Schlopp, SW NE SE section 32-20-2w, Lucien field, Logan County, had first Wilcox sand at 4,878-4,914 feet, second Wilcox sand 4,981 feet, total depth 5,101 feet, flowed 1,548 bbls. of oil through casing in 12 hours, and made potential of 2,910 bbls. Gas volume averaged 5,110,000 feet. Oil tested 41 degrees gravity.

Champlin Refining Co. No. 10 Pfeiffer, NW SE NW section 4-19-2w, found second Wilcox sand at 4,990 feet, total depth 5,091 feet, was shot, flowed 220 bbls. of oil in eight hours and was completed with estimated potential of 660 bbls. of oil.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Blunt B, C W half W half NW section 26-15-3w, was a location.

Osage County

Pure Oil Co. and Sinclair Prairie Oil Co. No. 173 Osage, NW SW NE section 5-23-8, an old Osage County well, was cleaned out, pumped 20 bbls. of oil daily from pay at 1,907-57 feet, total depth, recompleted.

Lewis Production Co. and Phillips Petroleum Co. No. 4 Osage, SW NE NW section 9-24-7, topped Bartlesville sand at 2,670 feet, total depth 2,718 feet, was shot and completed as a 40-bbl. well.

Lewis Production Co. No. 5 Osage, NW SE NE section 20-24-7, had Bartlesville sand at 2,653-81 feet,

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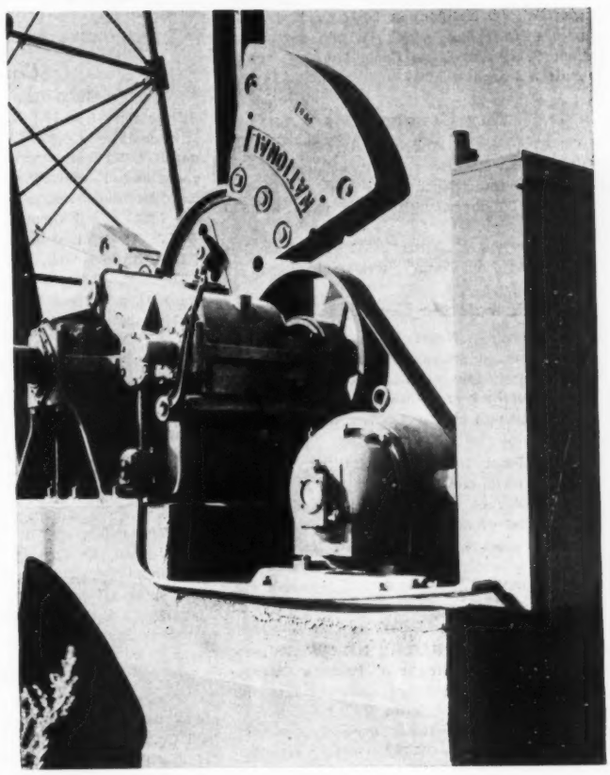

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OKLAHOMA GAS AND ELECTRIC COMPANY

Commercial Department

OKLAHOMA CITY W. H. STUEVE OKLAHOMA

total depth, swabbed 43 bbls. of oil in 14 hours and was completed.

H. O. Coldren No. 22 Osage, SW NE NW section 14-24-11, was completed as an input well at 1,737 feet, total depth.

Wolverine Oil Corp. No. 13 North Avant Unit, NW NW SW section 32-24-12, was completed as an input well at 1,748 feet, total depth.

Same operator's No. 56 North Avant Unit, CEL W half NE section 31-24-12, was completed as a repressure well at 1,732 feet, total depth.

The company's No. 71 North Avant Unit, NW SE NW section 30-24-12, topped Bartlesville zone at 1,592 feet, total depth 1,685 feet, was shot, pumped 18 bbls. of oil and 10 bbls. of water, and was completed, pumping 7½ bbls. of oil and 8½ bbls. of water in nine hours.

Sinclair Prairie Oil Co. No. 6 Osage, NW SW NW section 22-25-6, found Bartlesville zone at 2,697 feet, total depth 2,736 feet, was shot and had initial production of 45 bbls. of oil, daily.

Same company's No. 7 Osage, SW NW NW section 22-25-6, was shot and had initial yield of 20 bbls. of oil, from Bartlesville zone topped at 2,707 feet, total depth 2,747 feet.

Bay Oil Corp. and others No. 2 Osage, NE NW NE section 15-25-9, was dry and abandoned at 2,213 feet, total depth. Mississippi lime was found at 2,129 feet.

Magnolia Petroleum Co. No. 3 Osage, NE NW SW section 11-26-6, was shot and pumped 72 bbls. of oil daily from Bartlesville sand at 2,823-80 feet, total depth 2,884 feet.

Indian Territory Illuminating Oil Co. No. 450 Osage, SE cor. section 32-26-11, had Mississippi lime at 1,873 feet, total depth 1,882 feet, and produced 2,500,000 feet of gas, with 510 pounds rock pressure.

Trio Oil Co. and others No. 2 Osage, SE SE SW section 22-28-10, topped Peru sand at 1,020 feet, total depth 1,269 feet, was shot and swabbed 9 bbls. of oil, completed.

Indian Territory Illuminating Oil Co. No. 7 Osage, C E half W half SW section 13-24-9, an old well, was plugged back from 2,410 feet to 1,390 feet, and was dry and abandoned.

New work in Osage County: Lewis Production Co. No. 6 Osage, SW NE NE section 20-24-7, rigging up; same company's No. 6 Osage, SE NW SW section 27-24-7, location; Shell Petroleum Corp. No. 3 Osage, C W half W half NE section 2-26-7, drilling at 2,513 feet.

Kay County

Ventz Oil Corp. No. 4 Andrews, SW SW NE section 8-28-1w, Braman area, Kay County, topped Wilcox sand at 3,517 feet, total depth 3,533 feet, and flowed 350 bbls. of oil in 24 hours, with an estimated 225,000 feet of gas.

Helmerich & Payne No. 1 Scott, SE SE NE section 20-28-1w, wildcat in Kay County, was a rig.

Pottawatomie County

Atlantic Refining Co. No. 1 Billington, C NE SW section 12-9-4, West Earlsboro area, Pottawatomie County, had Hunton lime at 4,222 feet, total depth 4,229 feet, was acidized and flowed 120 bbls. of oil net in 24 hours, through choke. Gravity of the oil was 36.8 degrees.

Magnolia Petroleum Co. No. 6 Billington, SW NW NE section 22-7-4, an old well, was plugged back from 4,270 feet to 3,498 feet, perforated casing and produced 11,180,000 feet of gas, recompleted.

Magnolia Petroleum Co. No. 4 West, NE SE NE section 26-6-4, was a rig. Southwest Petroleum Co. No. 2 Gunter, SE NW SW section 32-11-4, was a rig.

Hughes County

Troup & Moore No. 1-A Haskett, NE NW SW section 15-7-8, West Holdenville area, Hughes County, found Gilcrease sand at 3,045 feet and was dry and abandoned at 3,069 feet, total depth.

Lincoln County

Skelly Oil Co. No. 1 Erwin, NE SW SW section 35-15-2e, North Wellston pool, Lincoln County, topped Wilcox sand at 5,095 feet, total depth 5,100 feet, was shot and acidized, and made potential of 174 bbls. of oil through tubing, with gas estimated at 650,000 feet.

Payne County

Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Friedemann, SE cor. section 28-19-3e, an old well in the Stillwater area, Payne County, was deepened from 4,305 feet to second Wilcox sand at 4,330 feet, total depth 4,695 feet, and was dry and abandoned. It was deepened after production from first Wilcox sand topped at 4,301 feet was exhausted.

Sagemoore Drilling Co. No. 1 Moore, SE SW NW section 17-18-1e, Payne County wildcat, was a rig.

Estimated Daily Production

Estimated daily production of Oklahoma for the week ending December 11 and for the preceding week was as follows:

	Barrels	
	Dec. 11	Dec. 4
Allen	6,125	5,625
Billings	7,550	7,475
Burbank	7,850	7,900
South Burbank	13,500	14,100
Balance Osage	18,250	19,500
Blackwell district	4,900	4,850
Bristow-Slick	7,025	7,250
Chandler	2,550	2,575
Crescent	8,100	10,700
Cromwell	3,325	3,225
Cushing-Shamrock	10,850	10,750
Duncan district	3,750	3,775
Edmond	11,800	12,500
Fish	4,625	5,050
Fitts	78,350	82,225
Jesse	3,350	3,700
Graham	4,275	4,300
Gray	1,225	1,225
Healdton	9,925	9,900
Hewitt	4,050	4,075
Holdenville	825	850
Keokuk	7,075	7,750
Konawa	1,475	1,450
Lucien	13,000	13,100
Moore	9,700	9,500
Oklahoma City	130,625	114,375
Olympic	6,900	8,925
Polo	725	700
Sasakwa and townsite	2,450	2,525
Sholem-Alechem	3,175	3,125
Seminole:		
Bowlegs	10,900	10,750
Carr City	4,725	4,950
Earlsboro	5,825	6,075
South Earlsboro	675	650
East Earlsboro	6,650	6,700
Little River	9,125	9,050
East Little River	1,050	1,025
Maud	600	600
Mission	1,675	1,825
Seminole	8,950	8,725
East Seminole	1,925	1,975
Searight	3,825	3,850
Total Seminole	55,925	56,175
St. Louis-Pearson	18,450	18,900
Tatums	6,000	5,975
Tonkawa-Garber-Thomas	4,475	4,575
Wewoka	2,700	2,650
Yale-Jennings	3,850	3,875
Other pools	81,450	80,950
Total Oklahoma	560,175	556,100

Coal County

Choctaw Oil & Gas Co. No. 1 Myers, C W half SW SE section 6-1n-18, Jesse area, Coal County, found Hunton lime at 4,033 feet, Sylvan shale 4,330 feet, total depth 4,332 feet, was acidized, flowed 370 bbls. of oil gross in two hours through tubing, and was completed for estimated potential of 336 bbls. of oil, after flowing 239 bbls. of oil through tubing in 22 hours, pinched.

W. A. Delaney No. 1 Sawyer, SW SE NW section 7-1n-8, an old well, was deepened from 4,595 feet to 4,715 feet, plugged back to 4,012 feet, was shot and acidized, and flowed 80 bbls. of oil gross in 1½ hours and was recompleted.

Carter County

Shell Petroleum Corp. No. 21 Johnson, NE SE SW section 4-4s-3w, Carter County, had sand series beginning at 864 feet, was bottomed at 1,090 feet, plugged back to 1,075 feet, and had initial production of 17 bbls. of oil in the first 24 hours. Gravity of the oil was 31 degrees.

Winkler & McQueen No. 1 Perkins, NE NW SW section 3-1s-3w, was dry and abandoned at 3,007 feet, total depth, in Deese formation.

Sinclair Prairie Oil Co. No. 17 Richards, NE SW NW section 9-4s-3w, was a location. Ben G. Barnett, Inc., No. 2-A Hooks, NE NW SW section 14-1s-3w, was building derrick.

Jefferson County

Four new producers were completed in the Oscar-Seay district of southern Jefferson County. Bridwell Oil Co. No. 9 Seay, NW NW NE section 10-7s-5w, had Hambro sand, Hoxbar formation, at 1,067-88 feet, total depth, was shot and pumped 108 bbls. of 31.6-gravity oil in 24 hours.

Long, Yingling & Lauck No. 26 Seay, SW SW SE section 3-7s-5w, had Hoxbar formation at 1,220 feet, total depth 1,240 feet, and pumped 50 bbls. of 36-gravity oil daily.

Same operators' No. 27 Seay, SW SW SE section 3-7s-5w, had sand at 1,072-87 feet, total depth, in Hoxbar formation, was shot and pumped 25 bbls. of 32-gravity oil daily.

Same operators' No. 28 Seay, SE SW SE section 3-7s-5w, had sand in Hoxbar formation at 1,220-50 feet, total depth 1,253 feet, was shot and pumped 100 bbls. of 36-gravity oil daily.

Bridwell Oil Co. No. 14 Seay, SW NW NW NE section 10-7s-5w, was drilling below 50 feet. H. W. Weir and others No. 1 Hayes, SE SE NW section 23-7s-7w, had erected derrick. It is to be a 4,500-foot rotary test.

Caddo County

Ohio Oil Co. No. 2 Lemon, SW SE SE section 2-5-9w, Cement district, Caddo County, had dug cellar and pits.

Stephens County

Gulf Oil Corp. No. 12 Sims, NE SW SW section 13-2s-4w, Stephens County, had sand at 526 feet, total depth 551 feet, pumped 2 bbls. of 22-gravity oil daily, and was completed.

George L. Pace and others No. 4-C Houston, NW NW SW section 2-2s-8w, had sand at 1,518 feet, total depth 1,538 feet, and pumped 30 bbls. of 38-gravity oil daily.

Lesh Brothers No. 11 Smith, SE NE NW section 27-1s-5w, was completed as a 3-bbl. well in sand at 355-85 feet, total depth 400 feet.

Louisiana-Arkansas Fields

(Continued from Page 73)

section 1-20-5, made an initial production of 80 bbls. per hour or 1,920 bbls. per day through open tubing. Tubing pressure was 250 pounds and casing pressure was 2,000 pounds. The casing was perforated at 5,347-66 feet, and 3,000 gallons of acid were used. The test is bottomed at 5,404 feet.

G. H. Vaughn No. 2 Eppinger, N half SW SW section 29-21-4, completed for 60 bbls. per hour on a half-inch choke with tubing pressure of 300 pounds and casing pressure of 60 pounds. Total depth is 5,137 feet.

Schuler Field

In Arkansas, the two most active spots are the Rodessa field in Miller County, and the new Schuler deep area of Union County. In the latter field, two producers were added to the new Permian production. The second and third producers in the Lower Marine zone paid off during the week.

Alice Sydney Oil Co. No. 2 Morgan, in NE SE section 18-18-17, completed for an initial of 1,886 bbls. per day through fractional-inch choke with tubing pressure of 90 pounds and casing pressure of 1,380 pounds. The total depth of the well is 7,700 feet, and perforations were made at 7,552-68½ feet. Gravity of the oil is 27.8 degrees and bottom-hole temperature was reported as 111° F.

The Alice Sydney well was closely followed by the Phillips Petroleum Co. No. 1 Gan, SE NE section 18-18-17, which made 3,768 bbls. per day in the new sand through perforations at 7,335-60 feet. The tubing pressure on the No. 1 Gan is 125 pounds and casing pressure is 720 pounds. Total depth is 7,700 feet.

The Schuler field is rapidly becoming one of the most active in the Ark-La-Tex area, and 13 tests are currently drilling in the pool, spurred on by the successful completions in the newly opened deep pay.

Gulf Coast Fields

(Continued from Page 74)

Hall, 5,400 feet, 211 bbls. per day, quarter-inch choke; Texas Co. No. 2 Pansy Yount, 5,878 feet, 386 bbls. per day, quarter-inch choke. LaBelle field: Sun Oil Co. No. 1 John Ward, 10,052 feet, dry and abandoned. Nome field: Shell Petroleum Corp. No. 4 Texas Public Service Co., 6,065 feet, dry and abandoned.

Matagorda County

Palacios field: Atlantic Refining Co. No. 3 Foley Land Co., abandoned.

Orange County

Orange field: Glenn H. McCarthy No. 1 E. B. Brown, 7,507 feet, dry and abandoned.

Wharton County

Five Corners field: Texas Co. No. 11-B Pierce Estate, 5,552 feet, 178 bbls. per day, quarter-inch choke. Withers field: Texas Co. No. 4-C Pierce Estate, perforated casing 5,537-40 feet, 74 bbls. per day, one-eighth inch choke. Louise field: Pure Oil Co. No. 6 Weaver, 5,155 feet, 177 bbls. 12 hours, quarter-inch choke. Magnet field: Atlantic Refining Co. No. 7-B H. C. Cockburn, perforated casing 5,535½ feet, 115 bbls. per day, one-eighth inch choke.

Kansas Developments

By
DAL DALRYMPLE

EXTEND PAWNEE ROCK AREA; UNCOVER DEEP LIME IN ELK

Extension of the Pawnee Rock pool of Pawnee County to the east was assured at Mid-Continent Petroleum Corp. No. 1 Smith, NW NW SE section 13-20-16w, although it may be deepened before completion. It produced 440 bbls. of 38-gravity oil in 45 hours, and later yielded 182 bbls. in 21 hours. Gas volume measured 36,300,000 feet. Siliceous lime was found at 3,762 feet, total depth 3,809 feet.

Activity continues unabated in the Neosho Falls district of Woodson County, with two wells completed on the townsite and others in the field nearing completion. Circle Oil Co. No. 1 Delinky, on the townsite, was completed as a 20-bbl. well after acidizing. Derby Oil Co. and others No. 1 Neosho Falls was completed as a small pumper, both wells producing from the first break in Mississippi lime, around 1,200 feet.

Diller Oil & Gas Co. and H. L. Mourer No. 2 Draper, C NE NW section 10-24-17, southeast of Neosho Falls, was due for completion after acidizing the first break in the lime at 1,214 feet, total depth. It is one-half mile southwest of the discovery well in the Draper pool. Lilly & Sons have a 14-bbl. well in NE cor. section 7-24-17, 3 miles south of Neosho Falls, at total depth of 1,209 feet. Titanic Thompson No. 1 Moorhead, NE section 8-24-17, had initial production of 50 bbls. of oil daily from first break pay.

Interest in the old Ferguson ranch area of western Elk County was revived the past week when Bell Oil & Gas Co. No. 1 Ferguson, CEL NW NW section 23-30-8, found oil in Siliceous lime topped at 2,916 feet, total depth 2,918 feet. Oil rose 2,000 feet in the hole in 12 hours, with a small amount of water, and operators estimated production at 50 to 60 bbls. of oil daily. It is one-fourth mile northeast of an old Siliceous lime well completed about seven years ago and still producing 12 bbls. of oil daily. The area has had little activity until recently.

Wildcat Completions

Although Kansas wildcat activity claimed its customary share of interest the past week, only three outposts were completed and they were failures.

The interesting Ford County test drilled by Olson Oil Co. and associates at No. 1 Fowler, C SW section 26-27-22w, southeast of Dodge City, had nothing promising showing and was dry and abandoned at 5,907 feet, total depth. It topped Kansas City lime at 4,450 feet, Mississippi lime 5,045 feet, had a show of oil at 5,060 feet, Viola lime 5,655 feet, Simpson zone 5,805 feet, Siliceous lime 5,832 feet, sulfur odor in cores at 5,833-43 feet.

Arthur Brewer No. 1 Shepard, NW NW SE section 20-32-4e, Cowley County, had Mississippi lime at 3,041-61 feet, total depth, and was dry and abandoned.

John Hanna and others No. 1 Marshall, NE NW NW section 30-18-8w, Rice County wildcat, has been shut down at 1,530 feet for several weeks, and was reported abandoned.

Gillespie and others No. 1 Strong, NE NE NW section 9-18-8w, Rice County, has been inactive since reported as spudding early in September, and is abandoned.

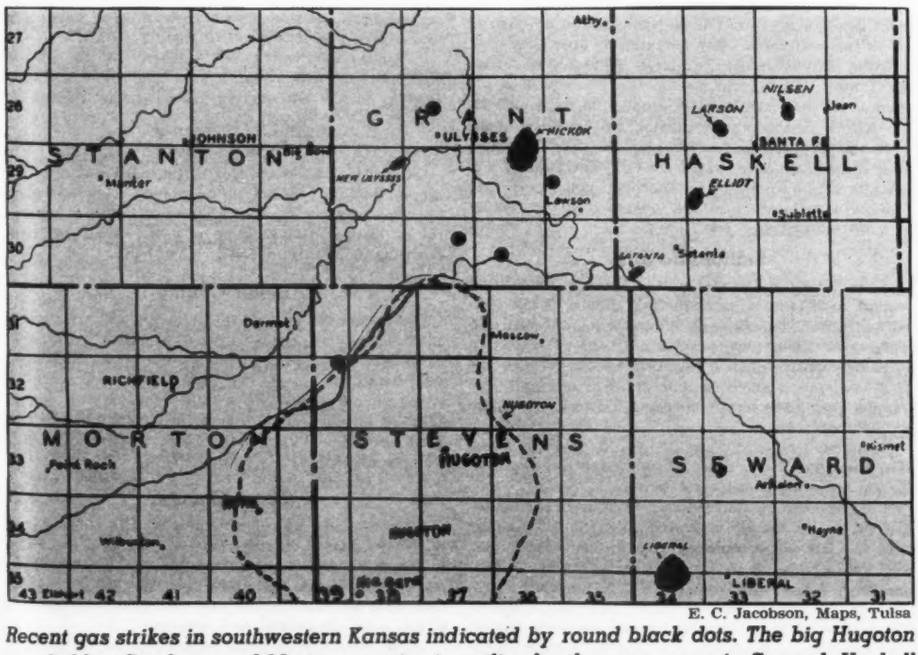
Barton County

Ten wells were completed in Barton County, divided among the Trapp, Bloomer and Silica districts.

Shell Petroleum Corp. No. 1 Leurman, SW NW SW section 18-16-13w, topped Siliceous lime at 3,352 feet, total depth 3,374 feet, swabbed 94 bbls. of oil in six hours, and acidized, pumped 911 bbls. in eight hours and made potential of 2,678 bbls.

Stanolind Oil & Gas Co. No. 1 Kultgen, SW SW NE section 26-16-13w, had Siliceous lime at 3,406 feet, total depth 3,429 feet, was treated with acid and made potential of 54 bbls. of oil.

Sinclair Prairie Oil Co. No. 1 Grosshardt, NE NE SW section 10-17-11w, found Siliceous lime at 3,295 feet, had first pay at 3,307 feet, was bottomed at 3,319 feet, was acidized, pumped 171 bbls. of oil in eight hours, and made potential of 305 bbls.



E. C. Jacobson, Maps, Tulsa

Recent gas strikes in southwestern Kansas indicated by round black dots. The big Hugoton gas field in Stephens and Morton counties is outlined; other gas areas in Seward, Haskell and Grant counties

Mid-Continent Petroleum Corp. No. 7 Schmidt, NW NW SW section 36-19-11w, made potential of 385 bbls. of oil after acidizing and shooting. Siliceous lime was topped at 3,289 feet, total depth 3,309 feet.

Stanolind Oil & Gas Co. No. 6 Panning, NE SE SE section 2-20-11w, had Siliceous lime at 3,273 feet, total depth 3,279 feet, swabbed at the rate of 90 bbls. of oil an hour and made potential of 2,032 bbls.

Same operator's No. 6 Shartz, SW SW NW section 2-20-11w, made potential of 1,189 bbls. of oil after acid treatment. Siliceous lime was found at 3,290 feet, total depth 3,302 feet.

Stanolind Oil & Gas Co. No. 7 Kowalsky, NE SE NE section 11-20-11w, topped Siliceous lime at 3,276 feet, was bottomed at 3,288 feet, and made potential of 1,811 bbls. of oil.

Same company's No. 7 Fred Panning, SE NE NW section 11-20-11w, was acidized and made potential of 1,654 bbls. of oil from Siliceous lime topped at 3,275 feet, total depth 3,287 feet.

Stanolind Oil & Gas Co. No. 2 Stuekemann, NW NW SE section 11-20-11w, had Siliceous lime at 3,287 feet, total depth 3,295 feet, and was completed for potential of 1,744 bbls. of oil.

Magnolia Petroleum Co. No. 1 Roetzel, NW NW NE section 25-20-11w, was bottomed at 3,262 feet, with Siliceous lime topped at 3,252 feet, pumped 262 bbls. of oil in four hours and made potential of 1,859 bbls.

New work in Barton County: Stanolind Oil & Gas Co. No. 10 Fred Panning, C W half NW section 11-20-11w, spudded; Herndon Drilling Co. and others No. 1 Arnold, NW NW SW section 19-18-15w, set 15-inch casing at 198 feet; Phillips Petroleum Co. No. 4 Kraft, NE NW NE section 10-17-11w, rigging up rotary; Shell Petroleum Corp. No. 2 Peterman A, NE NE SE section 13-16-14w, location, same company's No. 1 Stettinger, NE NW SE section 1-16-14w, rig; T. C. Johnson No. 3 Bitter, NE NE SW section 8-16-13w, spudded; Cities Service Oil Co. No. 2 Bitter B, C W half SE section 8-16-13w, rig.

Ellis County

Sinclair Prairie Oil Co. No. 3 Cress, NW SE NE section 13-11-17w, Cress pool, Ellis County, found Siliceous lime at 3,332 feet, was bottomed at 3,348 feet, acidized, pumped 173 bbls. of oil in eight hours, was reacidized and made potential of 411 bbls.

In the Bemis district, Blackwell Oil & Gas Co. No. 2 Richmond, SE cor. section 15-11-17w, pumped 617 bbls. of oil in eight hours after acidizing and made potential of 1,693 bbls. Top of Siliceous lime was 3,396 feet, total depth 3,410 feet.

Cities Service Oil Co. No. 13 Bemis, SE NW SE section 21-11-17w, had Siliceous lime at 3,361 feet, total depth 3,374 feet, and made potential of 2,381 bbls. of oil.

Ryan Consolidated Oil Corp. No. 3 Bemis, NE SE SW section 21-11-17w, was completed for potential of 3,073 bbls. of oil, after finding Siliceous lime at 3,404 feet and stopping at 3,411 feet, total depth.

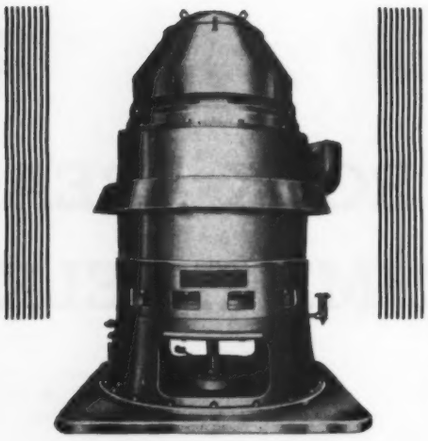
Magnolia Petroleum Co. No. 6 Johansen, NW SE NE section 22-11-17w, topped Siliceous lime at 3,401 feet, total depth 3,407 feet, swabbed 250 bbls. of oil in five hours and made potential of 1,708 bbls.

Cities Service Oil Co. No. 2 Hall B, SW NW NW section 26-11-17w, made potential of 2,773 bbls. of oil from Siliceous lime at 3,381-96 feet, total depth.

Wolf Creek Oil Corp. No. 1 Bemis B, NW NW SE section 4-12-17w, topped Siliceous lime at 3,616 feet, total depth 3,633 feet, plugged back to 3,503 feet, failed to get desired results by acidizing and was dry and abandoned.

Lario Oil & Gas Co. No. 4 Romine, NE SW NW section 18-11-16w, was completed as a water disposal well at 3,783 feet, total depth.

Two new operations in Ellis County were reported.



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TAPES—RULES—PRECISION TOOLS

SAGINAW, MICHIGAN • NEW YORK CITY

Watchorn Oil & Gas Co. No. 1 Brown, NE NE SE section 34-13-17w, was drilling below 400 feet. Lario Oil & Gas Co. No. 5 Romine, SW NW SW section 18-11-16w, was a rig.

Russell County

Largest producer completed in Russell County the past week was R. H. Shields and others No. 1 Giese, SE SE NE section 28-14-13w. It found Kansas City lime at 2,877 feet, pay 2,903 feet, total depth 2,915 feet, was acidized and pumped 743 bbls. of oil in eight hours, making potential of 2,145 bbls. of 39.1-gravity oil.

Stanolind Oil & Gas Co. No. 15 Dortland C, SW NE SE section 5-14-15w, topped Kansas City lime at 3,048 feet, was bottomed at 3,079 feet, was treated with acid and made potential of 161 bbls. of oil, with large quantities of water.

Darby Petroleum Corp. No. 2 Dumler C, SW SW NE section 11-14-15w, flowed 324 bbls. of oil in four hours after acidizing and made potential of 1,858 bbls. from Kansas City lime topped at 3,024 feet, total depth 3,072 feet.

Transwestern Oil Co. No. 12 William Polcyn, SE NE SW section 11-14-15w, topped Gorham sand at 3,261 feet, was bottomed at 3,263 feet, pumped 414 bbls. of oil in eight hours and made potential of 1,209 bbls.

J. C. Shaffer and others No. 4 Cramm, NE NW SE section 11-14-15w, had Kansas City lime at 3,030 feet with pay at 3,057 feet, total depth 3,076 feet, was acidized and made potential of 1,204 bbls. of oil.

Coralena Oil Co. No. 4 George Sellens, SW SW SE section 20-15-13w, found Siliceous lime at 3,299 feet, total depth 3,302 feet, was acidized, pumped 347 bbls. of oil in eight hours and earned potential rating of 1,013 bbls.

Skelly Oil Co. No. 7 Neidens, NW SW SE section 32-15-13w, was completed as a water disposal well at 3,629 feet, total depth. Granite Wash was found at 3,542 feet.

First reports of new activity in Russell County: Parks and others No. 1 Gorham Estate, SW NW NE section 19-15-15w, rig; Cities Service Oil Co. No. 1 Tittle B, NW NW SE section 14-15-14w, rig; Transwestern Oil Co. No. 2 Cramm, SW SW SE section 11-14-15w, rig; J. J. Hall No. 4 Miller, SE NW NW section 31-14-13w, rig; R. H. Shields No. 1 Rogg, NW NW SW section 28-14-13w, moving in material; R. H. Shields No. 4 Letsch, NE SE SE section 27-14-13w, rig.

Rice County

Three producing wells were completed in Rice County. Rose Spring Drilling Co. and others No. 2 Mantel, SW NE NE section 18-20-10w, found Siliceous lime at 3,302 feet, was bottomed at 3,318 feet and made potential of 1,165 bbls. of oil.

Continental Oil Co. No. 2 Gum, SW NW SE section 34-19-10w, made potential of 1,116 bbls. of oil after acidizing Siliceous lime topped at 3,301 feet, total depth 3,307 feet.

Stearns & Walker and others No. 1 Oden, SW SW NW section 6-21-7w, found Conglomerate at 3,330 feet, total depth 3,347 feet, pumped and flowed 80 bbls. of oil in two hours and made potential of 1,089 bbls.

New activity in Rice County: Witt and associates No. 1 Reiff, NW NW SE section 22-18-10w, was at old total depth of 3,270 feet; F. Hollos No. 1 Stout, NE SE NE section 6-18-10w, rigging up standard tools; Shell Petroleum Corp. No. 1 Zogie, NW NW NE section 13-18-8w, rig; Sinclair Prairie Oil Co. No. 5 Bolton, NW SW SW section 31-18-7w, rig; Shell Petroleum Corp. and others No. 2 Haferman, C SW section 16-19-9w, fishing at 3,399 feet.

Stafford County

Stanolind Oil & Gas Co. No. 14 Komarek, NW SE NE section 30-22-11w, topped Siliceous lime at 3,552 feet, set 6-inch casing there, was bottomed at 3,566 feet and made potential of 1,496 bbls. of oil.

Same company's No. 4 Heyen A, SE NE NW section 31-22-11w, found Siliceous lime at 3,532 feet and was completed at 3,560 feet, total depth. It made potential of 1,360 bbls. of oil.

Tom Palmer No. 1 Fair, SE NE SW section 10-22-11w, had Siliceous lime at 3,607 feet and was dry and abandoned at 3,645 feet, total depth.

First reports of Stafford County operations: Stanolind Oil & Gas Co. No. 1 Walker, NE NE SW section 33-21-12w, rig; same company's No. 5 Spangenburg, SE NW SW section 29-22-11w, rigging up rotary; same company's No. 15 Komarek, SE SW NE section 30-22-11w, rig; Lindsay & Balliere No. 1 Tieperman, SW SW NW section 31-32-1w, drilling ahead; Amerada Petroleum Corp. No. 1 Tiechman, NW NW SE section 12-22-13w, rigging up rotary; Fred Rust and others No. 1 Sims, NW NW SW section 8-23-11w, moving in tools; Stanolind Oil & Gas Co. and others No. 1 Volker, SW NW NE section 23-24-11w, rig.

Sedgwick County

Prunty Production Co. and others No. 3 Earl Black A, SW SW NW section 16-25-1e, Sedgwick County, had Misener sand at 3,327 feet, total depth 3,328 feet, was acidized and made potential of 1,296 bbls. of oil.

Murfin and others No. 1 Wickham, NE NE SW section 18-28-1e, was a machine.

Estimated Daily Production

Estimated daily production of Kansas for the week ending December 11 and for the preceding week was as follows:

	Barrels	
	Dec. 11	Dec. 4
Oxford City	1,450	1,500
Burrton	10,125	10,025
Ritz-Canton	5,025	4,100
Graber	2,350	2,150
Hollow-Nikkel	2,550	2,600
Lerado	1,600	1,400
Voshell	2,275	3,325
Wellington	3,225	3,175
Ellsworth County:		
Lorraine	2,750	2,750
Other pools	1,200	1,120
Rice-Barton counties:		
Bloomer	3,125	3,000
Chase	6,850	6,375
Geneseo	1,925	2,250
Raymond	1,950	1,700
Silica	15,550	11,900
Keesling	1,125	1,150
Hauschild	1,525	1,400
Miscellaneous Rice	7,560	8,205
Miscellaneous Barton	9,355	6,630
Russell County:		
Fairport	1,760	2,420
Gorham	1,425	2,435
Russell	1,795	620
Sullivan	5,755	7,560
North Trapp	10,005	9,085
Miscellaneous Russell	7,760	6,635
Sedgwick County:		
Valley Center	1,080	1,115
Miscellaneous	2,660	2,730
Ellis County:		
Bemis	7,100	6,875
Miscellaneous	2,905	2,090
Kingman County	685	525
Stafford County	2,860	3,140
Greenwood County	9,875	9,900
Butler County	16,150	16,050
Other fields	25,545	23,840
Total Kansas	178,875	168,775

Ellsworth County

Magnolia Petroleum Co. No. 1 Zink, SW NW SW section 32-17-10w, Ellsworth County, topped Kansas City lime at 2,945 feet, pay 2,970 feet, total depth 3,024 feet. It was treated with acid and was completed for potential of 225 bbls. of oil with 36 bbls. of water.

Stanolind Oil & Gas Co. No. 1 Stumps, SW SW NE section 30-17-10w, was moving in rotary tools.

Reno County

The only completion of the week in Reno County was at Drillers Gas Co. No. 1 Schowalter, NW cor. section 34-24-5w. It found Chat at 3,394 feet, set 7-inch casing at 3,399 feet, had pay at 3,450-59 feet, total depth. was acidized and flowed 94 bbls. of oil in 24 hours with an estimated 5,000,000 feet of gas.

Transwestern Oil Co. No. 2 Teten, SW SW NE section 12-23-4w, was a rig. Kolkin and associates No. 2 Priddle, C NW SW section 16-24-4w, was rigging up rotary.

Rooks County

Krueger and others No. 1 Rathburn, SE NW SW section 14-9-16w, an old Rooks County well, was deepened from 3,395 feet to 3,590 feet and recompleted for an estimated 50 bbls. of oil daily. Production was from Conglomerate topped at 3,540 feet.

Butler County

Saco Oil Co. No. 1-A Barnhill, SE SW NE section 12-27-7e, Butler County, topped Kansas City lime at 2,089 feet and was dry and abandoned at 2,200 feet, total depth.

Stewart & Gross No. 1 Piper, NE SE NW section 13-29-3e, an old well, was deepened from 1,636 feet to 2,315 feet, total depth, had a hole full of water and was abandoned.

Grant County

Two new gas wells were completed in Grant County, where several wildcats have opened new gas areas in the past year. United Producing Co. No. 1 Taylor, NE NE SW section 2-30-35w, had pay sand at 2,540 feet, total depth 2,720 feet, and produced 4,500,000 feet of gas, with 420 pounds rock pressure.

R. K. Wilson No. 1 Sledd Farm Corp., SE cor. section 11-28-38w, was a location.

Panhandle Eastern Pipe Line Co. No. 1 Bank, C sec-

tion 16-30-35w, had pay at 2,490 feet, water sand at 2,760-65 feet, total depth, plugged back to 2,710 feet, was acidized and produced 4,000,000 feet of gas.

Greenwood County

One Greenwood County test was completed at McGinnis No. 2 Jackson, NW SE NW section 25-25-8. Bartlesville sand was found at 2,400 feet, total depth 2,423 feet. It was shot and pumped 20 bbls. of oil daily.

Pioneer Oil Co. No. 1 well, NW SW NE section 7-26-10, was a location. Chris Sheedy No. 11 Green, NE SE NE section 11-23-9, was drilling ahead.

Woodson County

Chris Sheedy and associates completed a 50-bbl. well at No. 4 Enloe, NE NW SE section 28-25-14, Woodson County. It found Bartlesville sand at 1,425 feet, was bottomed at 1,490 feet, and was shot.

B. & B. Oil Co. No. 3 Corkery, NE NW NW section 29-25-14, found Bartlesville sand at 1,386 feet, total depth 1,408 feet, was shot and pumped 20 bbls. of oil daily.

Additional New Work

In Cowley County, Deep Rock Oil Corp. No. 3 Cranston, NW SW NE section 30-32-6, was a location.

In Harvey County, Derby Oil Co. No. 3 Lehman, SW SE NW section 13-22-2w, was a rig.

In McPherson County, Continental Oil Co. No. 1 Jones A, SE cor. section 30-21-1w, had started work; Pryor & Lockhart No. 1 Bixby, NE NE SW section 24-19-3w, was a rig.

In Stevens County, Panhandle Eastern Pipe Line Co. No. 1 Armstrong, C NE section 24-33-39w, was preparing to start drilling.

In Sumner County, Sinclair Prairie Oil Co. No. 5 Herrick, SW NE SE section 15-35-2e, had started work; E. B. Shawver No. 1 Stewart, NW NW SE section 4-32-3w, was a cellar.

West Texas Fields

(Continued from Page 75)

No. 1 E. F. Cowden, 4,070-4,280 feet, 1,054 bbls. Two wildcats were completed in this area: Wentz Oil Co. No. 1-A TXL, 4,025-4,200 feet, 1,830 bbls. per day; Borsodi, Beaty & Bowles No. 1 TXL, 4,190-4,280 feet, 95 bbls. per day.

Fisher County

In the Rotan area, General Crude No. 1 Morrow, 3,488-98 feet, pumped 763 bbls. per day; Everts Drlg. Co. No. 1 M. A. Taggart, dry and abandoned at a total depth of 3,809 feet. Two wildcats were dry and abandoned: Consolidated Oil and N. H. Martin No. 1 A. J. Florida, total depth 3,610 feet; I. J. Allen No. 1 H. T. Newman, total depth 3,433 feet.

Gaines County

In the Wasson area, Humble Oil & Refining Co. No. 1 T. S. Rily, 4,925-95 feet, 263 bbls. per day; Carter No. 2 Brand, dry and abandoned at 5,014 feet. A wildcat, Mitchell & Sullivan No. 1 Shell-T. S. Rily, dry and abandoned at 5,302 feet.

Glasscock County

A wildcat, Amerada No. 1 Neal, was dry and abandoned at 5,370 feet.

Howard County

In the Chalk-Roberts-Settlers area, Marrich-Bristow No. 5 Roberts, 2,900-73 feet, 276 bbls. per day on the pump; Lloyd Nobles No. 2 Otis Chalk, 2,915-3,007 feet, 1,257 bbls. per day.

In the Denman area, Standard of Texas No. 10 Dodge, 2,499-2,809 feet, 183 bbls. per day.

Jones County

In the Avoca area, Iron Mountain Oil Co. No. 2 Jones-Stasney-Bowden, 3,225-44 feet, 7,500 bbls. per day.

In the Howley area, Sinclair Prairie No. 12 Bertha King B, 2,145-2,167 feet, 181 bbls. oil and 27,600 feet of gas.

In the Lewis area, Fain-McGaha and S. B. Roberts No. 1 W. H. Daugherty, 1,337-57 feet, 544 bbls. in 20 hours.

A wildcat, W. L. Herring No. 1 J. W. Hargon, was dry and abandoned at 2,708 feet.

Loving County

In the Mason area, Michigan Gas & Oil Co. No. 4 Kyle, 3,909-38 feet, 605 bbls. per day.

Martin County

A wildcat, Green and others No. 10 B. Holt, dry and abandoned at 4,753 feet.

Pecos County

In the Tippett-Toborg area, Stanolind-Continental No. 14-C J. H. Tippett, 482-87 feet, 4 bbls.; Stanolind-Continental No. 15-C J. H. Tippett, 402-87 feet, 10 bbls.

A wildcat, Humble Oil & Refining Co. No. 1 Pryor, dry and abandoned at 201 feet.

Sterling County

A wildcat, Wilcox Oil & Gas No. 1 Kinnebrew Estate, dry and abandoned at 4,126 feet.

Upton County

In the McCamey area, Brown-Hancock and others No. 2-D Continental-Baker, 2,135-2,217 feet, 983 bbls.; Pure Oil Co. No. 7 Hughes, 2,472-2,565 feet, 504 bbls.; Cardinal Oil Co. No. 4 Wooley, 2,091-2,173 feet, 243 bbls.; Texas Co. No. 35 King, 2,407-09 feet, pumped 341 bbls. per day; Shell Petroleum Co. No. 2-C Rogers, 2,310-80 feet, 348 bbls.; Cardinal No. 5 Wooley, 2,116-56 feet, 663 bbls.; Choate & Hogan No. 6 Baker, 2,210-2,326 feet, 843 bbls.; John Emch No. 5 Lyon Estate, 2,283-88 feet, 403 bbls.; Eppenauer No. 6-A Pure-Lane, 2,065-2,135 feet, 701 bbls.; Anderson Oil Co. No. 3 Elder, 2,190-2,238 feet, 860 bbls.

Ward County

In the Grand Falls area, Lynch No. 8-A Himmel, 2,230-2,412 feet, 227 bbls.; W. C. Proctor No. 4 Allen, 2,168-2,255 feet, 42 bbls.; Reno Oil Co. No. 3 Boogher, dry and abandoned; Sidwell & Myers No. 4 Cannon, 2,214-2,352 feet, 75 bbls.

In the Hathaway area, Humble Oil & Refining Co. No. 22 Richter, 2,767-2,930 feet, 530 bbls.; Gulf Oil Corp. No. 63 Estes, 2,515-2,650 feet, 1,104 bbls.; Humble Oil & Refining Co. No. 24 Richter, 2,449-2,610 feet, 818 bbls.; Gulf Oil Corp. No. 66 Estes, 2,525-2,670 feet, 1,501 bbls.; Gulf Oil Corp. No. 65 Estes, 2,490-2,670 feet, 1,064 bbls. per day; Gulf Oil Corp. No. 64 Estes, 2,472-2,640 feet, 442 bbls. per day.

In the Hutchins area, Gulf Oil Corp. No. 91 Hutchins, 2,530-2,730 feet, 2,106 bbls.

In the O'Brien area, Gulf Oil Corp. No. 88 O'Brien, 2,567-2,770 feet, 676 bbls.

Two wildcats were completed: Magnolia Petroleum Co. No. 1-79 Sealey, dry and abandoned at 4,315 feet; Provine & O'Quinn No. 2 Tubbs, 2,150-2,210 feet, 95 bbls.

Winkler County

In the Henderson area, Skelly Oil Co. No. 4-B Daugherty, 3,040-56 feet, 972 bbls.

In the Halley area, Skelly Oil Co. No. 24 Halley, 2,750-2,896 feet, 1,021 bbls.

In the Kermit area, Magnolia Petroleum Co. No. 98 Walton, 2,835-2,940 feet, 908 bbls.; Maxwell No. 6 Gartex, 2,745-3,086 feet, 486 bbls.; Magnolia Petroleum Co. No. 109 Walton, 3,135-3,228 feet, 406 bbls.; Magnolia Petroleum Co. No. 115 Walton, 2,835-2,940 feet, 984 bbls. per day.

In the Keystone field, Gulf Oil Corp. No. 21 Keystone, 3,280-3,455 feet, 370 bbls.; Gulf Oil Corp. No. 22 Keystone, 3,488-3,500 feet, 345 bbls.

Michigan Fields

(Continued from Page 70)

full-year production of 11,913,000 bbls. in 1936 and 15,776,237 bbls. in 1935, the record year.

Only the Ogemaw and Salem fields showed production gains for November. Average daily runs from the various fields for November were reported as follows:

	Wells	Bbls. daily
Porter-Yost	427	8,826
Greendale-Chippewa	271	1,759
Geneva-Midland	3	23
Vernon-Leaton-Denver	95	1,625
Sherman-Isabella	49	6,107
Crystal-Winfield	79	970
Home-Vickeryville	9	85
Beaverton	26	255
Buckeye*	307	24,362
Ogemaw	211	2,338
Adams-Arenac	2	107
Clayton-Arenac	37	2,368
Saginaw	55	31
Birch Run	25	54
Dundee-Monroe	3	26
Salem-Allegan	47	3,305
Muskegon	92	165
Total	1,738	52,406

*Under strict proration.

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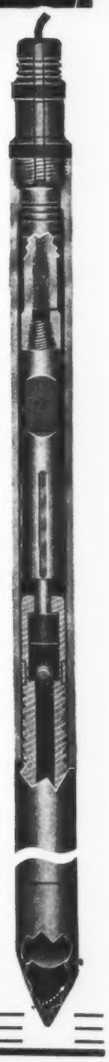

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Rocky Mountain Area

GOOD WELL EXTENDS HOBBS; EASTERN COLORADO FAILURE

By
T. R. INGRAM

DENVER, Colo., Dec. 13.—Gulf Oil Corp. is abandoning its eastern Colorado test in Lincoln County after going 100 feet into the Arbuckle lime, and is preparing to drill another test in Cheyenne County. One new operation was reported in Archuleta County.

Shawnee district in Converse County, Wyoming, has 13 operations headed for the shallow pay. Continental Oil Co. No. 1 Leach, in East Lance Creek, is plugging back after going to 6,434 feet. Same company's No. 8 Rohiff, on the west side, made 129 bbls. beaned down, from the Minnelusa. The Ohio Oil Co. No. 1 Leo-OPC-7, an outpost on the east side, is pumping 10 to 15 bbls. from the Minnelusa. Two more locations were released in the Middle Baxter Basin area in Sweetwater County. The Osage Oil Trust completed a 50-bbl. well in Osage.

Montana exports to Canada dropped from 398,634 bbls. in September to 89,422 bbls. in October. There were no completions. Two new operations were reported in Kevin-Sunburst.

Union Oil Co. of California will drill a deep test in western Nebraska.

NEW MEXICO

Completion of a large producer on the northeast edge of the Hobbs field, Lea County, was a feature of field work in New Mexico the past week. It was Two States Oil Co. No. 1 Morris, SW SE SE section 21-18-38, which flowed 2,545 bbls. of oil daily through casing and tubing. Gas volume was estimated at 2,500,000 feet. Lime pay was topped at 4,238 feet, total depth 4,244 feet, and the well was acidized with 12,000 gallons. It extends Hobbs production one-fourth mile northeast.

Another large producer of the week was Gulf Oil Corp. No. 1-E Janda, NE NW NE section 21-23-36, in the Lynn pool. It topped pay at 3,620 feet, was bottomed at 3,710 feet, acidized and flowed 152 bbls. of oil an hour. Gas gauged 3,121,000 feet.

Repollo Oil Co. No. 1 Cowden, NE cor. section 31-23-37, was completed to open a new sand pool 2 miles northwest of the Mattix sand area and 3 miles northeast of the Cooper lime pool. It topped pay at 3,550 feet, total depth 3,850 feet, plugged back to 3,570 feet and flowed 55 bbls. of oil in 11 hours through quarter-inch choke on tubing.

Other Lea County completions: Stanolind Oil & Gas Co. No. 2-A Langlie, C NW SW section 9-25-37, found pay at 3,415 feet, total depth 3,463 feet, and flowed 121 bbls. of oil daily through choke.

Plains Production Co. No. 1 Stuart, NE SW SW section 10-25-37, flowed 200 bbls. of oil daily through casing from pay topped at 3,359 feet, total depth 3,420 feet, after a shot. Oil production was accompanied by 500,000 feet of gas.

Mid-Continent Petroleum Corp. No. 2 Boren, C SE NE section 20-22-36, was bottomed at 3,852 feet and flowed 30 bbls. of fluid daily, cutting 35 per cent water. Gas measured 3,000,000 feet.

Humble Oil & Refining Co. No. 3 Fopeano, C SW SW section 25-20-36, had pay at 3,714 feet, total depth 3,855 feet, was acidized, and flowed 202½ bbls. of oil in three hours through tubing, with 929,000 feet of gas. Gravity of the oil was 35.2 degrees.

Williams & Cockburn No. 3 Miller, C SW SW section 23-17-32, pumped 25 bbls. of oil daily through tubing from pay topped at 3,730 feet, total depth 3,880 feet.

Stanolind Oil & Gas Co. No. 2-A Myers, C SW SW section 15-24-37, was an abandoned location.

Lea County

Amerada Pet. Corp. No. 6 Byrd, SE sec. 12-20-36. Loc.
Amerada Pet. Corp. No. 2 Corrigan, C S½ SE NE sec. 4-22-37. Drlg. 3,275 ft.
Amerada Pet. Corp. No. 3 Laughlin, C NW NE sec. 9-20-37. T.D. 2,585 ft.; set 8-in. 2,573 ft.
Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-27-37. Drlg. 3,575 ft.
Anderson-Prichard Oil Corp. No. 2 Langlie, SE sec. 8-25-37. Drlg. 3,290 ft.
Atlantic Ref. Co. and others No. 1 Davis, SW NW SW sec. 34-23-36. R.U.R.
Atlantic Ref. Co. No. 1 Grizzell C SE NE sec. 6-22-37. T.D. 1,187 ft.; set 7⅝-in. 1,170 ft.
Barnsdall Oil Co. No. 1 H. Whitten, NE NE NW sec. 4-24-36. T.D. 1,529 ft.; set 9⅝-in. 1,519 ft.
Barnsdall Oil Co. No. 1 J. Whitten, SE cor. sec. 33-23-36. Drlg. 300 ft.
Cities Service Oil Co. No. 8 Closson, C W½ NE sec. 6-22-36. Drlg. 3,482 ft.
Cities Service Oil Co. No. 1-H State, C NE NE sec. 17-22-36. T.D. 3,884 ft.; prep. to deepen.
Cities Service Oil Co. No. 1-A Closson, C NE NE sec. 18-22-36. Wildcat; T.D. 3,625 ft.; reaming.
Continental Oil Co. No. 3-B-6 Elliott, C SE SE sec. 6-22-37. T.D. 3,778 ft.; drk. burned; removing wreckage.
Continental Oil Co. No. 3-B-31 Lockhart, SE sec. 31-21-36. T.D. 3,924 ft.; acd.; waiting.
Continental Oil Co. No. 2-B-24 Reed, SW sec. 24-20-36. T.D. 3,859 ft.; F. 57 B.O. in 8 hrs.; tstg.
Continental Oil Co. No. 3-B-24 Reed, SW sec. 24-20-36. R.U.R.
Continental Oil Co. No. 1-A-7 State, SE sec. 7-19-37. T.D. 4,046 ft.; tstg.
Continental Oil Co. No. 2-E-17 State, C NE SE sec. 17-22-36. Drlg. 3,285 ft.
Continental Oil Co. No. 6-A-17 State, C NW NE sec. 17-19-37. Drlg. 3,902 ft.
Cranfill & Germany No. 1 Weir, C NE NE sec. 15-20-37. T.D. 4,210 ft.; S.D.O.
Culbertson & Irwin No. 1 Alston, NW cor. sec. 26-25-37. Drlg. 2,843 ft.
Culbertson & Irwin No. 4-A Humphrey, NE SE NW sec. 3-25-37. Drlg. 625 ft.
Culbertson & Irwin No. 5-A Humphrey, NE NW SE sec. 3-25-37. Cellar, pits.
Culbertson & Irwin No. 7-A Humphrey, NE SW SE sec. 3-25-37. Loc.
Culbertson & Irwin No. 1 Liberty Royalty, NW sec. 3-25-37. Moving in material.
Danglade & Clower No. 1 Clifton, C SW SW sec. 4-22-37. T.D. 105 ft.; running csg.
Eastland Oil Co. No. 1 Waldrop, C SE SE sec. 1-20-38. Drlg. 3,395 ft.
L. E. Elliott No. 1 Elliott, NE NE SE sec. 26-20-36. T.D. 90 ft.
Emperor Oil Co. No. 1 Johns, C SW NW sec. 24-17-32. T.D. 4,390 ft.; P.B. 4,260 ft.; acd.
Empire O. & R. Co. No. 1-G State, sec. 2-21-36. T.D. 3,900 ft.; S.D.
Empire O. & R. Co. No. 2-B State, C SE SW sec. 2-21-37. Drlg. 3,850 ft.
J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. Drlg. 3,665 ft.
Great Western Prod. Co. No. 1 State, C SE SE sec. 16-26-37. O.W.D.D.; T.D. 3,315 ft.; S.I.
Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. T.D. 3,681 ft.; tstg.
Gulf Oil Corp. No. 2 Cole, C NE NE sec. 16-22-37. T.D. 1,141 ft.; S.D.
Gulf Oil Corp. No. 1 Elliott, SW SE SE sec. 15-25-37. Drlg. 3,380 ft.
Gulf Oil Corp. No. 2 Kyte, SE sec. 7-19-37. Drlg. 1,785 ft.
Gulf Oil Corp. No. 1 LeMunyon, C NE NE sec. 28-23-37. Old well; T.D. 3,484 ft.; testing.
Gulf Oil Corp. No. 2-B Stebbins, C NW NE sec. 5-22-37. Drlg. 2,345 ft.
Gulf Oil Corp. No. 1 Felton, C SE SE sec. 28-21-36. T.D. 3,885 ft.; flwd. 30 B.O.P.D.; testing packer.
Gulf Oil Corp. No. 3 Stuart, C SE NE sec. 10-25-37. Drlg. 2,755 ft.
Gulf Oil Corp. No. 1-B White, SE sec. 35-20-36. Drlg. 2,776 ft.
Herschback Oil Co. No. 1 Burleson, C E½ NE NW sec. 8-25-37. Drlg. 3,075 ft.
Humble O. & R. Co. No. 3 Williams, C SW NW sec. 34-24-37. T.D. 3,532 ft.
Humble O. & R. Co. No. 1-H State, SW sec. 27-22-37. R.U.R.
Jal Nat. Gas Corp. No. 2 Justis, NE sec. 20-25-37. T.D. 3,029 ft.; tstg.
Landreth Prod. Co. No. 2 Grizzell, C SW NE sec. 8-22-37. T.D. 3,710 ft.; to acid.
Harry Leonard No. 4 Lanehard, SW NW NE sec. 21-25-37. Drlg. 2,565 ft.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 34-17-34. T.D. 4,905 ft.; P.B. 4,794 ft.
Magnolia Pet. Co. No. 2 State-Bridges, sec. 14-17-34. T.D. 4,593 ft.; flw. 51 B.O. in 1 hr., naturally.
Magnolia Pet. Co. No. 3 State-Bridges, C NW SW sec. 23-17-34. T.D. 1,885 ft.; set 9⅝-in. csg.
J. A. Mascho No. 1 Cloyd, C SE SE sec. 20-22-33. Wildcat; T.D. 3,516 ft.; set 8¼-in. csg.
McDowell & Weiner No. 1 Elliott, SE cor. sec. 19-21-37. T.D. 3,778 ft.; may deepen.
C. T. McLaughlin No. 1 Polhamus, NE sec. 9-24-37. Drlg. 3,610 ft.
C. T. McLaughlin No. 1 Imperial Royalties, NW SE NW sec. 9-24-37. T.D. 282 ft.; set 10¾-in. 274 ft.
National Drlg. & Prod. Co. No. 1 Flint, C NE NE sec. 29-20-34. Wildcat; drlg. 3,653 ft.
Ohio Oil Co. No. 2 Grizzell, C NW SE sec. 5-22-37. T.D. 600 ft.; prep. to drill in.
Ohio Oil Co. No. 1 Hardy, NE NE SE sec. 20-21-37. Drlg. 3,612 ft.
Ohio Oil Co. No. 1 Kutter D, C SW SW sec. 18-19-37. Drlg. 3,535 ft.
Ohio Oil Co. No. 7 State-McDonald, C SW SE sec. 16-22-36. T.D. 3,871 ft.; C.O.
Lem Peters No. 1 Graham, sec. 27-22-37. T.D. 1,118 ft.; underreaming.
Plains Prod. Co. No. 1 Humphreys, NE sec. 3-25-37. Loc.
Plains Prod. Co. No. 2 Moseley, SW NE SE sec. 34-24-37. Mach.
Repollo Oil Co. No. 1 Powhatan Carter, SW SW NE sec. 9-24-37. T.D. 3,428 ft.
Repollo Oil Co. No. 3 Christmas, NW NW NE sec. 28-22-37. Drlg. 1,980 ft.
Repollo Oil Co. No. 3 Moseley, SW sec. 34-24-37. Drlg. 3,117 ft.; to rig up cable tools.
Repollo Oil Co. No. 4 Roach, NW NW SW sec. 21-20-37. T.D. 3,875 ft.; P.B. 3,860 ft.; shot; R.U.S.T.; to C.O.
Repollo Oil Co. No. 1-B State, NE NE NW sec. 7-22-36. Drlg. 3,600 ft.
Repollo Oil Co. No. 1 Turner, sec. 29-21-37. Drlg. 3,770 ft.
Repollo Oil Co. No. 2 White, SE sec. 24-20-36. Cellar and pits.
Repollo Oil Co. No. 2-B Whitten, NE cor. sec. 4-24-36. T.D. 1,450 ft.; set 9⅝-in. 1,442 ft.
Rowan Drlg. Co. No. 2 Elliott B, C NW NW sec. 9-22-37. T.D. 3,545 ft.; straightreaming.
Rowan Drlg. Co. No. 2-A Elliott, C NE SW sec. 27-22-37. Drk.
Rushwold Oil Co. No. 1 Mattix, C SE NE sec. 10-24-37. Drlg. 2,660 ft.
Samedan Oil Co. No. 4 Hughes, C NW SE sec. 10-23-37. T.D. 3,625 ft.; flwd. 95 B.O.P.D.; S.I.
Shell Pet. Corp. and Devonian Oil Co. No. 3 Christmas, C SW NE sec. 21-22-36. T.D. 3,855 ft.; P.B. 3,840 ft.; tstg.
Shell Pet. Corp. No. 2-L Endura-State, NE SE SE sec. 1-21-35. Drlg. 2,845 ft.
Shell Pet. Corp. No. 4-E State, C SW NW sec. 12-20-36. Drlg. 3,777 ft.
Shell Pet. Corp. No. 3-J State, SE cor. sec. 32-20-37. Drlg. 3,504 ft.
Skelly Oil Co. No. 1-J State, C NE NW sec. 31-17-35. Drlg. 2,966 ft.
Skelly Oil Co. No. 5 J. B. Baker, C SE NW sec. 27-22-37. T.D. 3,620 ft.; tstg.
Skelly Oil Co. No. 1 Combest, NW NW SE sec. 27-23-36. T.D. 3,918 ft.; swbg.
Skelly Oil Co. No. 1 E. T. Johns, SW sec. 21-24-37. T.D. 3,180 ft.; to drill plug.
Skelly Oil Co. No. 5 G. W. Sims, C SE NW sec. 10-23-37. M.I.M.
Skelly Oil Co. No. 2 Mon-State, C NE SE sec. 13-19-36. T.D. 4,062 ft.; to pmp.
Skelly Oil Co. No. 3 G. W. Sims, C NW NE sec. 9-23-37. T.D. 3,642 ft.; C.O.
Skelly Oil Co. No. 1-C R. R. Sims, sec. 3-23-37. Drlg. 3,622 ft.
Skelly Oil Co. No. 1-E W. P. Sims, C NW NE sec. 10-23-37. T.D. 3,625 ft.; flwd. 452 bbls. in 24 hrs.
Skelly Oil Co. No. 2 W. P. Sims, C SE NE sec. 10-23-37. T.D. 3,650 ft.; rng. tbg.
Southern Pet. Exploitation Co. No. 1 Downes, SW sec. 32-21-37. Drlg. 1,272 ft.
Stanolind O. & G. Co. No. 1-A Hill, C NW SE sec. 6-21-37. T.D. 2,273 ft.; straightening hole.
Stanolind O. & G. Co. No. 1-B Hill, NE sec. 6-21-37. T.D. 3,810 ft.; P.B. 3,801 ft.; C.O.
Stanolind O. & G. Co. No. 2-B Langlie, C NW NW sec. 15-25-37. T.D. 3,458 ft.; P.B. 3,147 ft.; S.I.
Stanolind O. & G. Co. No. 3-A Myers, C SW SE sec. 22-24-37. T.D. 3,580 ft.; flwd. 258 B.O.P.D.; S.I.
Stanolind O. & G. Co. No. 1 Thompson, NE sec. 6-21-27. Drlg. 3,410 ft.
W. H. Street No. 3 Woods, C NW NE sec. 22-22-37. T.D. 1,137 ft.; set 8⅝-in. 1,137 ft.
Sun Oil Co. No. 2 Lanehart, C NE SE sec. 20-25-37. Drlg. 2,675 ft.
Texas Co. No. 1 American National, C NE NW sec. 18-19-37. Drlg. 3,707 ft.
Texas Co. No. 2-B Cagle, SW sec. 15-26-37. Drlg. 275 ft.
Texas Co. No. 2 Fristoe, NW NE NE sec. 3-25-37. Drlg. 3,350 ft.
Texas Co. No. 3 Falvy, C NW NW sec. 8-22-37. T.D. 3,745 ft.; rng. tbg.
Texas Co. No. 1-M State, NW sec. 1-18-34. Drlg. 600 ft.
Texas Pacific Coal & Oil Co. No. 7-A State, Acct. 2, C NW NW sec. 8-22-36. R.U.R.
Two States Oil Co. No. 1 Moskin, C NW NW sec. 5-22-37. Drk.
Two States Oil Co. No. 2 Moskin, C NE NE sec. 6-22-37. Drk.
Western Gas Co. No. 1 Cowden, SE cor. sec. 30-23-37. Drlg. 2,723 ft.

Eddy County

F. E. Baker No. 1 Eddy, NE sec. 12-22-27. Drlg. 845 ft.
Barnett Oil Dev. Co. No. 1 King Permit, C NW SE sec. 23-26-30. Drk.
Ed Bryant No. 1 Stebbins, C NE SW sec. 19-20-29. T.D. 1,000 ft.; S.D.O.
Carper Drlg. Co. No. 2 Gissler, SW SE NW sec. 23-17-30. T.D. 3,688 ft.; prep. squeeze job.
Danciger O. & R. Co. No. 3 Turner, SW NE SW sec. 18-17-31. Drlg. 3,345 ft.
D. & B. Oil Co. No. 2 Jenkins, SW NW NW sec. 20-17-30. Drlg. 2,675 ft.
Emperor Oil Co. No. 3 Puckett, C NE NW sec. 24-17-31. T.D. 3,920 ft.; flwd. 54 B.O.P.D.
Etz Bros. No. 4 State, C S½ SE SE sec. 16-17-30. Drlg. 2,750 ft.
Finley & Cherry No. 1 Buchley, C NW NW sec. 28-16-31. Wildcat; T.D. 4,080 ft.; S.D.
Flint Prod. Co. No. 1-B State, SE sec. 20-17-30. Drlg. 3,800 ft.
Franklin Pet. Corp. No. 1 McIntyre, NE NW SW sec. 20-17-30. Drlg. 2,738 ft.
C. J. Frederick No. 1 Reed, C NE SW sec. 28-24-28. Drlg. 920 ft.
F. W. & Y. Oil Co. No. 6-A Gissler, NE sec. 23-17-30. T.D. 3,470 ft.; S.&F. 130 B.O.P.D.
F. W. & Y. Oil Co. No. 7-A Gissler, NE sec. 23-17-30. T.D. 3,480 ft.; flwd. 50 B.O.P.D.; to shoot.
F. W. & Y. Oil Co. No. 1-B Gissler, SW sec. 15-17-30. Loc.
F. W. & Y. Oil Co. No. 2-B Gissler, C NW NW sec. 24-17-30. Drlg. 1,200 ft.

F. W. & Y. Oil Co. No. 3 Jackson, C NW SE sec. 13-17-30. T.D. 2,953 ft.; fsg.
Geo. F. Getty, Inc., No. 1-E State, NE SW SW sec. 16-17-31. Drlg. 2,905 ft.
Grayburg Oil Co. No. 9 Burch, SW NE NE sec. 19-17-30. T.D. 3,158 ft.; swb. 22 B.O.P.D.
Grayburg Oil Co. No. 10 Burch, SE NE NE sec. 19-17-30. Drlg. 1,988 ft.
Grayburg Oil Co. No. 4 Keely, SE sec. 24-17-9. Cellar and pits.
M. A. Grisham No. 1 Chaytor, NE sec. 10-24-26. Drlg. 1,859 ft.
H. A. Hartwell No. 1 Vandagrift, NE NE SE sec. 8-18-27. Spd.
R. L. Holcomb No. 1 State, NW sec. 22-17-28. T.D. 455 ft.; S.D.
Woodworth Hawkins No. 1 Mack, C SW SW sec. 20-24-27. Drlg. 735 ft.
C. F. Ingram No. 1 Page, NE NE SW sec. 15-21-28. T.D. 1,310 ft.; S.D.O.
Nash-Windfohr & Brown No. 5-A Jackson, NE sec. 13-17-30. T.D. 3,511 ft.; flwd. 273 B.O.P.D.; to reacidize.
Nash-Windfohr & Brown No. 6-A Jackson, SE sec. 13-17-30. Drlg. 3,450 ft.
Nash-Windfohr & Brown No. 7-A Jackson, SE sec. 13-17-30. T.D. 3,510 ft.; flwd. 276 B.O.P.D.
Nash-Windfohr & Brown No. 2-B Stevens, NW sec. 13-17-30. Rig.
W. A. Nichols No. 1 Johnson, NE sec. 35-16-21. Wildcat; T.D. 3,901 ft.; fsg.
Red Gulch Oil Co. No. 1 State, C S½ SE SE sec. 4-17-28. Drlg. 1,150 ft.
Red Lake Oil Co. No. 1 Williams, C SW NW sec. 21-17-28. Drlg. 1,170 ft.
Repollo Oil Co. No. 3-D McIntyre, SE cor. sec. 17-17-30. Drlg. 825 ft.
Repollo Oil Co. No. 1-A Parke, NW NE NE sec. 22-17-30. Drlg. 2,300 ft.
Repollo Oil Co. No. 2 West, SW SE SE sec. 9-17-31. Drlg. 3,312 ft.
Paul Sargent No. 1 State, NE sec. 16-17-31. T.D. 3,749 ft.; P.B. 3,745 ft.; tstg.
R. A. Shugart No. 1 Coulthard, C NW SW sec. 35-18-31. Drlg. 3,665 ft.
W. K. Royalty No. 2 State, C NE NW sec. 16-17-31. Cellar.
W. O. Snyder No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. T.D. 2,808 ft.; W.O. csg.

Chaves County

English & Hamon No. 11 Billingslea, SE sec. 9-15-29. T.D. 3,670 ft.; to deepen.
E. J. Fisher No. 1 Etz Permit, NE sec. 23-7s-26. Drlg. 400 ft.
Mathieson et al No. 1 Cole, C NE NW sec. 19-15-27. Drlg. 925 ft.

Curry County

Bond & Harrison No. 1 Hart ranch, C NW SE sec. 13-2n-31. T.D. 3,258 ft.; S.D.O.

De Baca County

Land Owners Oil Co. No. 1 McAdoo, SW cor. sec. 16-1s-27e. O.W. prep. to deepen from 5,850 ft.

McKinley County

George Mulvey No. 1 State, SW cor. sec. 11-25-8. T.D. 263 ft.; S.D.
S. Dysart No. 1 Govt., NE sec. 14-14-10w. T.D. 1,390 ft.; fsg.

Dona Ana County

Jules C. Bertrand No. 1 Casad Permit, sec. 24-26-5e. T.D. 47 ft.; S.D.O.

Otero County

Fred Turner, Jr., No. 1 Ella Everett, C SE SE sec. 34-22-13. Spd. and S.D.
Fred Turner, Jr., No. 1 H. V. Everett, C SE SE sec. 28-22-13. Loc.

Roosevelt County

C. S. Peterson and Conquistadores Oil Co. No. 1 Good, NW SE SE sec. 28-5s-30. Drlg. 400 ft.

NORTHWEST NEW MEXICO

San Juan County

Continental Oil Co. No. 68 Rattlesnake, NW NW SE sec. 2-29n-19w. Drlg. 530 ft.
C. E. Brawley No. 1 Godrun, C SE SW sec. 34-30n-11w. Drlg. 820 ft.
Continental Oil Co. No. 67 Rattlesnake, C SE sec. 2-29-19w. Drlg. 748 ft.
Anna Oil Corp. No. 6 Govt., SW NE NE sec. 33-30n-11w. Drlg. below 1,000 ft.

Socorro County

Central New Mexico Oil Co. No. 1 Brown, SE NW sec. 16-3n-1e. Drlg. below 1,700 ft.

COLORADO

Adams County

Oklahoma Oil Co. No. 1 Baxter, C SW sec. 2-3s-66w. Drlg. 4,704 ft.
Glenridge Oil Corp. No. 1 Hills, SE SE SE sec. 27-3s-64w. Drlg. 4,345 ft.

Archuleta County

Chromo O. & G. Co. No. 1 Fitzhugh, C SW SW sec. 34-33n-1e. Cmtd. 12½-in. at 65 ft. (first report).
K. L. Kendrick No. 1 Crowley, sec. 2-32n-1e. S.D.O. at 1,208 ft.
Pagosa Oil & Dev. Co. No. 1 Macht, sec. 32-36n-1e. Cmtd. 12¼-in. on bottom at 328 ft. and S.D.
Prospect Oil Synd. No. 2 Lena M. Garnett, NW SW NE sec. 13-33n-2e. T.D. 1,450 ft.; prep. to core.

Boulder County

J. B. Furstenberg No. 1 Foote, NE NW SE sec. 20-1n-70w. T.D. 2,965 ft. in coffee grounds sh.; prep. to run 6¼-in.

LaPlata County

N. Spatter No. 1 Bryce, SE SW SW sec. 31-33n-9w. T.D. 1,175 ft. in hd. gr. L.; bldg. standtard rig and installing more power.

Larimer County

Great West O. & G. Corp. No. 1 Haworth, C SW SE sec. 16-4n-69w. S.D. 3,865 ft.

Las Animas County

B. E. Price has disposed of his interest in the Garcia Corp. No. 1 McClung, and new interests which have taken it over to drill deeper include O. W. McLeod, of Canon City, and Horace Frantz, of Salida. Old total depth was 1,816 feet, where it had a hole full of water in the Lykens. New interests are preparing to run the 10-inch to 1,870 feet for a water shutoff.

Garcia Corp. No. 1 McClung, NE NW SE sec. 19-33s-61w. T.D. 2,100 (?) ft.; prep. to run 10-in. to 1,870 ft.

Lincoln County

The Gulf Oil Corp. No. 1 Smith, C SW SE section 19-15s-53w, Rush Creek district, is being abandoned at 6,943 feet, 100 feet in the Arbuckle, topped at 6,843 feet. No important oil or gas shows were encountered. It had the top of the Dakota at 2,295 feet and the top of the Pennsylvanian at approximately 4,870 feet. Elevation 4,844 feet. Rig will be moved to Cheyenne County for a test on its Arena block.

Consolidated Smelting & Metals Corp. No. 1 Hancock, NE NE SW sec. 7-17s-52w. S.D. 2,860 ft.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75w. Drlg. 5,470 ft.; more sh. oil at 5,460 ft.

Pitkin County

Glenco Dev. Co. No. 1 Govt., NW cor. sec. 9-10s-89w. Drlg. 2,050 ft.

Routt County

Major Oil Reserve No. 1 State, SW NW sec. 17-6n-86w. Bldg. rig; contr. to Westwick Drlg. Co. (M. J. Westwick, Santa Barbara, Calif.).
Craig & Moore No. 1 Erwin, C SW NE sec. 33-7n-85w. R.U.C.T.; will spud.

WYOMING

Albany County

Murphy Oil Co. No. 11 Holst, NE SW NE sec. 13-17n-77w. Drlg. dark sh. 2,670 ft.
Wyco Oil Co., Inc., No. 3 Chappel, NE NE NW sec. 33-21n-76w. Drlg. 1,625 ft.; gas in Wall Creek 685-711 ft. not tstd.
Ohio Oil Co. No. 2 Griffin, SW SE SW sec. 2-21n-77w. Drlg. 2,865 ft.
Murphy Oil Co. No. 2 Holst-Woolf, NE NW NW sec. 19-17n-76w. Drlg. gr. sh. 3,374 ft.

Campbell County

Powder River O. & G. Co. No. 1 Rhodes, NE SE SW sec. 24-49n-74w. S.D. 650 ft.

Carbon County

The Sinclair-Wyoming Oil Co. No. 11-A Wertz, on the Wertz dome, a completion last week for 285 bbls. per day in the Tensleep, is slowly increasing and showed for 310 bbls. on last reported gauge. Location for No. 12-B Wertz is a close offset to No. 11-A, being only a few

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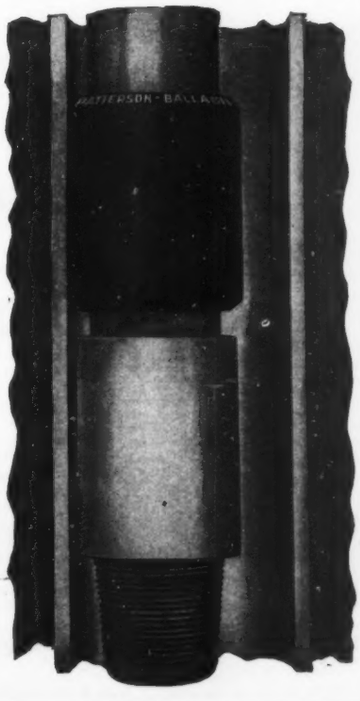

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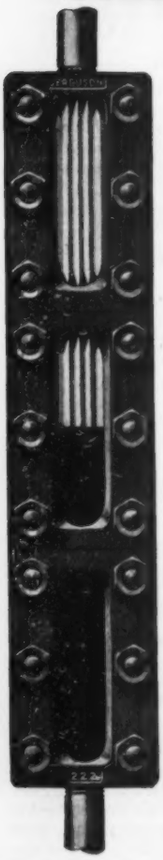

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feet away. The footage is 1,310 feet from the north line and 770 feet from the west line of section 7.

Sinclair-Wyoming Oil Co No. 12-B Wertz, SE NW NW sec. 7-26n-89w. R.U.R.

Ohio Oil Co. No. 1 C. E. Brimmer, C SW SE sec. 32-27n-89w. Drlg. 170 ft.

Ohio Oil Co.-California Co. No. 4-A Kyle, 661 ft. from N line and 648 ft. from E line, sec. 26-21n-79w. M.I.M. (cor. loc.).

Ohio Oil Co. No. 13 Harrison & Cooper, SW SE SW sec. 35-20n-78w. Drlg. 2,633 ft.

Ohio Oil Co. No. 2 Union Pacific, SW SW SE sec. 17-21n-80w. Drlg. 2,997 ft.

Ohio Oil Co.-California Co. No. 4-B Kyle, C SW SW sec. 24-21n-79w. W.O. rig.

Ohio Oil Co.-California Co. No. 6 Union Pacific-Johnson, C SW SE sec. 23-21n-79w. Drlg. 1,462 ft.

Producers Oil Co. No. 1, CNL sec. 14-20s-88w. Drlg. 194 ft.

Ohio Oil Co.-California Co. No. 5 Cronberg-U.P., C NW NW sec. 25-21-79w. S.D.O. 5,765 ft.

Medicine Bow Oil Co. No. 1 Hintze-Govt., C NE SE sec. 18-22n-78w. S.D. 2,347 ft.

Converse County

There is a considerable increase in activity in the Shawnee district, where the objective is reached at a shallow depth. The New Era Fuel Corp. (Stanley Gray and associates) who operate in the northern Montana fields, released two new locations this week and has taken over the drilling of the John T. Coffee well on the Mary Gaspar lease, which the company has acquired. The New Era's No. 1 John Jones, SE SE SE section 21-32n-69w, on a 320-acre lease acquired from the Wyoming Southern Oil Co., was drilled to 802 feet and the 8¼-inch was cemented at 747 feet, where a show of oil was reported. Rig was then moved away and no information was given out as to results.

The Wyoming Southern Oil Co. No. 3 Salisbury had trouble in shutting off water in a thin streak between the casing point and top of the first sand and deepened the hole to 630 feet and cemented the 5 $\frac{7}{16}$-inch on top of the second sand at 628 feet. This company's No. 1 Salisbury, NW NW SE section 27-32n-69w, completed a year ago at 490 feet for 7,000,000 feet of gas, was opened recently and gauged 9,090,000 feet in 24 hours under 28 pounds pressure. When closed for five minutes it built up a pressure of 175 pounds. Same company's No. 2 Salisbury, NE NW SE section 27, completed last May at 460 feet for 7,500,000 feet, was opened and gauged 2,128,000 feet open flow under 8.5 pounds pressure. Robert Taylor, of Cheyenne and Denver, a well-known operator in Wyoming fields, is head of Wyoming Southern.

New Era Fuel Corp. No. 1 Layne, SE NW NE sec. 27-32n-69w. M.I.M. (first report).

New Era Fuel Corp. No. 1 Brown-Govt., NW SW NW sec. 25-37n-69w. R.O.G. (first report).

New Era Fuel Corp. No. 1 Gaspar, NW NW SW sec. 25-32n-69w. T.D. 435 ft.; rmg. hole for 8¼-in. to bttm. (formerly John T. Coffee, Jr.).

E. B. Jones No. 1 Govt., SE SE sec. 28-32n-69w. M.I.M. (first report).

Putnam et al No. 1 Probesh, SE SE sec. 29-32n-69w. M.I.M. (first report).

Kaufman & Quinlan Bros. No. 1 Lane, SE NW NE sec. 27-32n-69w. Loc.

Ainsworth Oil Co. No. 1 Marberger, NE SE NE sec. 34-32n-69w. T.D. 400 ft.; bailing.

Hall-Thornton et al No. 1 Roth, C NW SE sec. 13-32n-69w. T.D. 467 ft.; fshg. 8¼-in.

Wyoming Southern Oil Co. No. 1 Lane, C NW NE sec. 27-32n-69w. Spd. and S.D.

Elbe Oil Ld. & Dev. Co. No. 1 Benham, NW NE sec. 5-31-70w. M.I.M.

Tom Carney No. 1 Beaver, SE SE SW sec. 28-35n-68w. Some material on loc.

Chadron-Osage Oil Co. No. 1 State, SW cor. sec. 16-32n-69w. T.D. 4,060 ft.; cmtd. 8¼-in. at 4,040 ft.; W.O.C.

Wyoming-Southern Oil Co. No. 3 Salisbury, NE NE SE sec. 27-32n-69w. T.D. 630 ft.; cmtd. 5 $\frac{7}{16}$-in. 628 ft.

Fremont County

A. J. Hardendorff, former drilling contractor in Salt Creek, has purchased the 45 per cent interest held by Continental Supply Co. and the 55 per cent interest owned by I. N. Isenberg, of Los Angeles, in the Woodson Oil Co., operating in the Hudson field in Fremont County. Deal included all property of the company, comprising an 830-acre lease, eight wells, of which five are producing, in section 13-2s-1e, equipment and other properties. At present the wells are making 55 bbls. per day from the Embar at 2,550 feet, and is marketed in tankcars to the Standard refinery at Casper. Deal was made through Marion D. Smith, of the Casper office of the Continental Supply Co. Hardendorff, after leaving Casper, worked in the Kansas and Mid-Continent fields and was vice president and manager of the Fredell Construction Co., of Houston. Company under its new management will recondition the wells and do some additional drilling.

Sinclair-Wyoming Oil Co. No. 2-B Muskrat, NW NW NE sec. 4-33n-92w. Drlg. 1,638 ft.

Stanolind O. & G. Co. No. 1 Govt., C SE SE sec. 3-33n-96w. Drlg. 5,587 ft.

Consolidated Oil Properties No. 3, C SW SE sec. 16-1n-1w. Drlg. 415 ft.; S.O. 400 ft.

Hot Springs County

Italo Pet. Corp. No. 1 Phebus-Govt., NW NW SW sec. 11-44n-98w. Cg. 3,187 ft.; top Embar 2,949 ft.; no shows.

Oscar B. Grace No. 4 Govt., CNL SE NW sec. 21-43n 92w. T.D. 380 ft.; fsg. bailer.

J. W. Bales No. 1 Govt., CWL SE SW sec. 28-43n-93w. M.I.M. for test to Madison in Red Springs dist.

Natrona County

General Pet. Corp. No. 1 Govt., C NW SE sec. 21-35n-77w. T.D. 4,626 ft.; S.O. in cores from Shannon sd. at 4,555 ft.; rmg. to lower 11¾-in. from 1,800 ft. to bttm.

Western Producers, Inc., No. 1 Govt., NW SW SE sec. 5-39n-78w. Drlg. 1,012 ft.

Stanolind O. & G. Co. No. 11 Wyo. Asso.-T.P.-35, C NE SW sec. 35-40n-79w. Drlg. 2,119 ft.

Stanolind O. & G. Co. No. 8 T.P.-Wyo.-Asso.-35, C NW NW sec. 35-40n-79w. R.U.R.

Niobrara County

The Continental Oil Co. No. 1 Leach, in East Lance Creek, 4 miles northeast of nearest production in the Lance Creek field, was drilled to a total depth of 6,434 feet and has begun plugging back to 3,900 feet where it will test a show of gas in the Dakota. It topped the Sundance at 4,178 feet and had water in all three sands. It is reported to have gone directly from the Lakota into the Sundance without picking up any Morrison formation. The Minnelusa, at an unnamed depth, was dry.

The Continental Oil Co. No. 8 Otto Rohlff, SE SW SE section 31-36n-65w, on the western flank of the Sundance pool, which was noncommercial in that horizon and was carried on down to the Minnelusa topped at 5,133 feet, made 129 bbls. in 24 hours through a three-sixteenth inch bean at a total depth of 5,242 feet. It was not given an open flow test. Elevation is 4,410 feet.

The Ohio Oil Co. No. 1 Leo-OPC-7, NW NW SE section 35-36n-65w, half a mile east of No. 5 Leo, which is productive in the Minnelusa, is pumping 10 to 15 bbls. per day with some water, from the Minnelusa at a total depth of 5,641 feet. It had the top of the Minnelusa at 5,630 feet. It about marks the limits of that horizon on the east.

Ohio Oil Co. No. 8 Converse Sheep, NE SE SW sec. 32-36n-65w. T.D. 360 ft.; cmtd. 13⅜-in. at 167 ft., 100 sacks; drlg. plug.

Ohio Oil Co. No. 2 Cash O.P.C.-5, NW NW NE sec. 4-35n-65w. Drlg. 3,855 ft.

Continental Oil Co. No. 6-B Schuricht, SW SW SE sec. 6-35n-65w. Drlg. r.b. at 4,079 ft.; first Sundance 3,825-3,967 ft.; basal Sundance 3,969-4,077 ft.; both dry.

Continental Oil Co. No. 3 Apex-1, SE SE NE sec. 34-36n-65w. T.D. 5,480 ft.; fsg.

W. A. Maupin et al No. 1 Berggren, NW sec. 23-35n-63w. Drlg. 180 ft.

Minnelusa Oil Co. No. 1-A Lamb, NE SE SW sec. 27-36n-65w. T.D. 5,412 ft.; R.U. to drill plug and test.

Continental Oil Co. No. 5-B Schuricht, C SW SW sec. 5-35n-65w. T.D. 5,273 ft.; made 555 B.P.D. through tbg. latest test.

Ohio Oil Co. No. 2 Leo-O.P.C., NE NE SE sec. 35-36n-65w. R.U.R.

Continental Oil Co. No. 1 Leach, SW NE NE sec. 29-36n-64w. T.D. 6,439 ft.; P.B. to 3,900 ft. to test.

MacKennie Oil & Dev. Co. No. 2 Thompson, NW NW NE sec. 7-35n-65w. Drlg. 4,857 ft.; top Minnekahta 4,647 ft.

MacKinnie Oil & Drlg. Co. No. 3 Thompson, NW NW NE sec. 7-35n-65w. Cellar and pits; Minnelusa test (first report).

Park County

Resolute Oil Co. No. 1 Northern Pacific, C NE NW sec. 21-57n-101w. Drlg. 8,500 ft. in Frontier.

Resolute Oil Co. No. 1 Govt., C NE NE sec. 20-57n-101w T.D. 8,670 ft.; shot 300 qts. at 8,425-8,645 ft. and 200 qts at 8,315-95 ft.; flowing by heads while wtg. to C.O. 150 ft. of cavings.

Ohio Oil Co. No. 4 Mack-O.P.C.-4, NE NW NE sec. 30-58n-99w. Bldg. rig.

Sweetwater County

The Rocky Mountain Drilling Co. and the Mountain Fuel Supply Co. each released a new location in the Middle Baxter Basin area. This makes four locations in the past two weeks in a district where no drilling has taken place for some time. They are between the North and South domes.

Rocky Mountain Drlg. Co. No. 1 Osborne, SE SE SE sec. 12-18n-104w. Drlg. 853 ft.; 12½-in. at 306 ft. (first report).

Mountain Fuel Supply Co. No. 1 Hoyt, SW SW SW sec. 32-19n-103w. Bldg. road.

Mountain Fuel Supply Co. No. 1 Lauzer, NW NW NW sec. 30-18n-103w. R.U.

Mountain Fuel Supply Co. No. 1 Hay, NE SE NW sec. 2-19n-110w. Drlg. 3,960 ft.

Italo Pet. Corp. No. 1 Govt., SW SW SW sec. 36-13n-95w. S.D. 610 ft.

Sinclair-Wyoming Oil Co. No. 77, SE NE NE sec. 10-26n-90w. Drlg. r.b. 3,294 ft.

Uinta County

E. A. Ottman et al No. 1 Govt., C SE NW sec. 26-14n-110w. Drlg. 1,230 ft.; S.S.O.

Weston County

Crude stocks in the Osage field were reported down to tank bottoms at the end of November and as a result drilling operations are more active when weather conditions permit. Most of the drilling wells are shut down at present on account of the weather. Production of the field for November was 24,040 bbls. and refiners took 29,200 bbls. from runs and stocks.

F. G. Dilger has announced his purchase of the Ost refinery at the junction of Highway 85 and the Custer road below Newcastle. The Dilger interests have ample production in the Osage field to supply the plant's ca-

pacity. Lloyd Giffin is handling the operations of the refinery.

The Osage Trust Co. had a good completion in its No. 27, C NW SE section 14-46n-64w. It will pump 50 bbls. per day from sand at 1,769-89 feet, after a shot with 30 quarts.

Osage Trust Co. No. 28, C NE SW sec. 14-46n-64w. Loc.
Chas. F. Martens No. 8, SW SW NW sec. 24-36n-64w. Loc
Osage Trust Co. No. 1, SE NW NE sec. 22-46n-64w. Drlg. below 100 ft.
John Brorphy No. 1 George, SW SE NW sec. 26-48n-64w. Res. at 1,824 ft. in Minnelusa; heavy water flow at 1,739 ft.
Sisty et al No. 1 Carmine, SE SW sec. 31-44n-62w. S.D. 835 ft.
Le Faivre Oil Synd. No. 1 Martin, NW NW SW sec. 29-45n-68w. Drlg. 2,550 ft.; will U.R. 10-in. at 2,130 ft. for water S.O.
Giles & Proutt No. 1 Govt., CEL SW NE sec. 29-45n-61w S.D. 179 ft.

MONTANA

The monthly statement of Montana production, refining, storage, etc., for October, released by the State Oil Conservation Board, shows the conditions which precipitated the hearing conducted at Great Falls to seek some way out of the disturbed situation. The statement shows that production dropped from 535,757 bbls. in September to 442,946 bbls. in October, a decrease of 92,811 bbls. Exports to Canada dropped in the same period from 398,634 bbls. in September to 89,422 bbls. in October, a decrease of 309,214 bbls. The market could not absorb the curtailed output and storage during October increased from 1,196,058 bbls. to 1,313,166 bbls., a gain of 217,108 bbls. during the month.

Carbon County

R. C. Tarrant No. 2 Heare, NW SE NW sec. 14-6s-10e. Drlg. 1,425 ft.
Miracle Oil Co. No. 2, CWL NE SE sec. 3-6s-23e. T.D. 1,568 ft.; cmtd. 5⅞-in.; drlg. plug.
Geo. Muth et al No. 1, CSL SE SE sec. 23-6s-23e. S.D. indef. at 1,500 ft.
Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW sec. 35-9s-23e. S.D. 1,626 ft. for 8¼-in.; top Frontier 1,608 ft.; small S.O.
Sha-Wa Pet. Co. No. 1 Govt., SW SW NE sec. 35-9s-23e. T.D. 2,100 ft.; U.R. 10¾-in. to bottom.
Sha-Wa Pet. Corp. No. 2 Govt., SW SE NE sec. 35-9s-23e. Loc.; Greybull sd. test.

Cascade County

C. Leonard Smith No. 1-A Smith-Schwingle, NE NE SW sec. 14-22n-2e. T.D. 750 ft.; fsg. tools.

Choteau County

Security Pet. Co. No. 1 Johnson, NE sec. 23-26n-2e. S.D. 1,690 ft. (C.D.) for winter.

Daniels County

White Tail O. & G. Co. No. 2 Wiley, NW NW NW sec. 10-36n-50e. Drlg. 1,675 ft. after rng. 10-in.

Fergus County

Baughman & Singely No. 1 Skaggs, C NW SW sec. 7-15n-20e. Drlg. 400 ft.
Lewistown Oil Co. No. 1 Parks, C NE NE sec. 13-15n-18e. Drlg. below 1,200 ft. after C.O. fsh.
East Crest Oil Co. No. 1 Brakke, NW SE SW sec. 14-15n-19e. Drlg. 595 ft. (C.D.).
White Top O. & G. Co. No. 1 Govt., C NE SW sec. 35-14n-19e. Drlg. 1,450 ft.

Glacier County

There were no completions or new operations in the Cut Bank field and only two wells are active. A. B. Cobb No. 1 State, C NE NE section 30-37n-4w, a wildcat in North Cut Bank, which last week was reported making gas in the Moulton sand, cemented pipe and shut down until spring. This test is an important operation. The location is 3 miles to the southeast of a wildcat drilled in 1933 by the Santa Rita Oil & Gas Co. in its No. 1 Jacobson, C NW NW section 23-37n-5w, which made 60 bbls. in 20 hours, with some water in the Cut Bank sand at 2,633 feet, total depth, and is still making around 20 bbls.

Glacier Prod. Co. No. 1 Reynolds, 2,490 ft. W of E line, 1,320 ft. N of S line. Spdg. 145 ft.
A. B. Cobb No. 1 State, C NE NE sec. 30-37n-4w. T.D. 2,592 ft.; S.D. until spring.
B. V. Hole No. 3 All.-124, SE SW SE sec. 1-32n-6w. T.D. 3,018 ft.; drlg. by tools; 1,500 ft. oil.

Hill County

W. E. Drought No. 1, SE NW SE sec. 29-32n-16e. Drlg. 1,040 ft.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15e. T.D. 1,750 ft.; prep. to set 5⅞-in. on top Madison 1,746 ft.

Lewis and Clark County

Lewis & Clark Oil Synd. No. 1 Lewis & Clark, NW NW SW sec. 11-18n-5w. Spdg.

Park County

Ben W. Ryan et al No. 1 Burgess, SE SW NW sec. 28-2s-11e. S.D. 1,250 ft.

Petroleum County

O. B. Canfield No. 2 Govt., SE SE NE sec. 21-17n-24e Drlg. 750 ft.; set 5⅞-in. for W.S.O.

Roosevelt County

John W. Schmidt et al No. 1 Freu, NW NW NE sec. 21-28n-50w. T.D. 1,400 ft.; cmtd. csg.; drlg. plug.

Toole County

Coeur d'Alene Oil Trust No. 2 Anderson, NE SW SW sec. 8-35n-1w. Drlg. 525 ft. (first report).
West Kevin Community Lease, Inc., No. 1 McClary, SE NE NW sec. 3-34n-4w. Drlg. 60 ft. (first report).
Chas. Grant et al No. 1 Anderson, SE NE NE sec. 26-35n-4w. Spdg.
New Era Fuel Co. No. 3 Goeddertz, C SE SW sec. 12-35n-3w. S.D. 980 ft.
Big West Oil Co. No. 7 McDonald, NW NE NE sec. 19-35n-2w. T.D. 1,617 ft.; contact 1,585 ft.; 2 B.P.D.; will acid. again.
56 Pet. Co. No. 1 Davidson, SE SE NW sec. 26-35n-4w. T.D. 2,080 ft.; will D.D.
Welch Bros. No. 2 Ward, SW SE NE sec. 29-35n-3w. S.D. 1,655 ft.
Plotke & Rader No. 11 Fryberger, NW SE SE sec. 29-35n-3w. S.D. 1,698 ft.; S.O.
Hamilton & Hamilton No. 4 Reeg, SE SW SE sec. 14-35n-2w. S.D. 450 ft.
Guy Smith No. 1 Govt., C NE SE sec. 35-36n-3w. Spd. 10 ft. and S.D.
C. T. Olen No. 7 Engemoen, C NW NW sec. 14-35n-2w. T.D. 1,607 ft.; contact 1,591 ft.
E. O. Reichoff No. 3 Baum, SW SW SE sec. 3-35n-3w. S.D. 10 ft.
Bryant Bros. No. 1 Lashbaugh, NE SW NW sec. 34-25n-2w. T.D. 850 ft.; R.U. heavier mach. to resume.

Outside Kevin-Sunburst

Montana Gas Corp. No. 2 Clark, C SE SW sec. 24-37n-1w. Drlg. 2,180 ft.

Yellowstone County

Riverton Oil Co. No. 1 Fox, CEL NW NE sec. 14-2n-23e. Top Dak. 1,800 ft.; rng. csg.
Broadview Dome Oil Co. No. 1, NE NE SW sec. 18-3n-23e. Drlg. 3,800 ft. in Embar; good S.O.
Lauriel Oil Co. No. 1, C NW SW sec. 7-2s-24e. S.D. 200 ft.

UTAH

Daggett County

Mountain Fuel Supply Co. No. 3-B Murphy, NW NW SW sec. 23-3n-24e. Cmtd. 13⅜-in. at 323 ft. and S.D. for winter.

Grand County

H. L. Rath, general manager of the Cane Creek Oil Co., advises that his company's No. 2 Shaffer, on the Cane Creek dome, is temporarily shut down at 810 feet by orders of the U. S. Geological Survey until casing can be run and cemented for protection against a possible blowout and for testing any oil and gas shows encountered at various depths. The well is only 200 feet from No. 1 Shaffer drilled by the Midwest Exploration Co. a number of years ago and which showed several hundred barrels of oil and gas at 2,025 feet. This well, which was plugged after going deeper, has had several blowouts in recent months and oil has been seeping to the surface around the old casinghead. Shows of oil reported in the log of the drilling well by Max La Grosilliere, drilling superintendent, are as follows:

60- 68	Blue clay and gravel; show oil.
104-106	Brown shale; show oil and gas.
184-190	Sandy shale; good show oil and gas.
217-224	Brown sand showing oil.
295-297	Good show oil and gas; total of above was estimated at about 10 bbls. per day.
352-355	Gray shale and sand; show oil estimated at 20 bbls.
449-460	Gray sandy shale with oil show.
722-730	Gas in gray sandy shale.

Oil pressure pump and 12½-inch casing has been ordered. Mr. Rath says the log is correlating perfectly with the discovery well with no evidence of faulting, indicative that the anticline is a natural trap and that oil in the discovery well did not come through a fissure.

Grand County

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. S.D. 6,715 ft.; M.I. heavier rotary equip.
Columbia Crude Corp. No. 1 Rath, NW SW SE sec. 12-25s-20e. T.D. 2,326 ft.; ran 5-in. to 6¼-in. shoe.
Cane Creek Oil Co. No. 1 Govt., NW SW sec. 31-26n-21e. T.D. 810 ft.; prep. to run 12½-in.

Summit County

Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e. Res. drlg. 2,430 ft.

NEBRASKA

Another deep test to the granite in western Nebraska is reported scheduled for early next year. R. A. McGoey, of the Union Oil Co. of California, and other officers of the company were in Denver the past week making arrangements. The company has a large block in Kimball County upon which it has been doing extensive geological work the past year and it is understood that a test will be started early in the spring to go to around 6,500 feet on the Agate structure. The structure is to the north of Scotts Bluff. Location has not been released but probably will be in section 15-28n-55w.

Sioux County

The J. M. Huber Corp. and United Producers, Inc., No. 1 Morgan, C SW SW section 32-35n-56w, a test on the Antelope structure, was plugged and abandoned at 3,999 feet. It tested the Minnelusa (?). It had the Pierre at 0-1,045 feet; Niobrara at 1,045-1,270 feet; Carlile, 1,780 feet; Grenaros to 2,475 feet; water in the Dakota at 2,490 feet; top of the Fuson at 2,584 feet; top Lakota, 2,655 feet.

Dawes County

Stephens Oil Corp. No. 1 Palmer, C NW SW sec. 1-33n-50w. S.D. 2,810 ft. in Lakota; water in the top.

NORTH DAKOTA

Williams County

California Co. No. 1 Kamp, C NW NE sec. 3-154n-96w. Drlg. below 4,236 ft.

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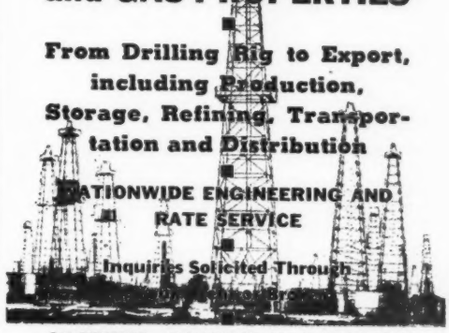

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THE OIL AND GAS JOURNAL

East and East Central Texas

By MITCHELL TUCKER

RESULTS OF SHUT DOWN TO BE MADE PUBLIC ON FRIDAY

DALLAS, Tex., Dec. 13.—The statewide hearing to be held in Austin, Tex., on Friday, December 17, will be all important to the operators in the East Texas field, as at that time results of the four weekly shutdowns and bottom-hole pressure surveys of key wells will be made public, and will serve as a basis for further action by the commission in prorating the field.

Oil operators and legislators of North and East Texas met in Dallas today to protest any continuation of Sunday shutdowns. There has also been a movement among independent operators to jointly propose and agree to a small reduction in the percentage allowable of potential from the 2.32 per cent which has maintained for a long while. Whether or not proposed reduction would work to actually cut oil production is questionable, as under a reduction in percentage allowable to the figure of 2.09 as proposed, a great portion of all the East Texas field wells could claim the marginal privilege of 20 bbls. minimum per well per day. At this time the daily field allowable totals 488,500 bbls., and it is being increased almost daily by new completions. During the past seven-day period 46 new completions were added to the giant field, bringing total producers to 24,121.

Kelsey Dome Wildcat

A new and important wildcat was staked in central Upshur County last week. The well is the Tom Hunter and American Liberty Oil Co. No. 1 J. P. Carter which has a contract depth of 9,000 feet. A 140-foot derrick has been built and the rotary is being rigged up preparatory to drilling within the next few days. This is the first deep test in this area to explore the Kelsey dome and production will be sought in the deep sands of the Lower Trinity series. The well is located in the J. H. Fields Survey, 1 mile north of Kelsey.

The old Hocker & Hughes wildcat test southeast of Clarksville in Red River County, which has been shut down at around 4,000 feet for some time, is now preparing to resume activities. Heavier equipment has been secured and it is now proposed that the test will continue to the Glen Rose or Travis Peak.

Cooper Brothers of Shawnee, Okla., have started activities at their second test on the Mrs. Lem Hayes tract near Deport in Lamar County. The test is expected to reach the Paluxy sand at a depth of about 4,500 feet. Location is about half a mile southwest of the first test which had a small showing last year.

Talco Pool Activities

The rapidly growing Talco pool of Franklin and Titus counties had another extension to the southwest with the completion of the L. S. Flannery No. 10 Hendrick well on the M.E.P.&P. Survey. The well pumped 549 bbls. daily through 5½-inch perforated casing. The sand was topped at 4,295 feet and the total depth is 4,315 feet.

Stroube & Stroube's efforts for a 3-mile western extension of Talco in their No. 1 Banks, J. Bowsman Survey, was abandoned last week as dry at a total depth of 4,361 feet. The Lower Paluxy here contained saturation, but lacked the necessary porosity to make a commercial producer.

Sulphur Bluff Pool

Abbott & Ruthland No. 1 Peyton, an attempted northern extension of the Sulphur Bluff pool in Hopkins County, proved to be unsuccessful. In the course of drilling the Woodbine sand was topped at 2,804 feet and the Georgetown lime at 3,346 feet. Operators contemplated drilling deeper into the Trinity series but after finding the Paluxy sand totally unproductive elected to cease operations. The test is now plugged and abandoned at a total depth of 4,502 feet.

Mexia Test

Pure Oil Co. No. 16 T. Kindrick, deep test in the Mexia field of Limestone County, is attempting to sidetrack the hole, after unsuccessfully fishing for a stuck drill stem for several months at a total depth of 8,847 feet. Attempts are now being made to cut the pipe at about 6,500 feet and drill ahead alongside the old hole.

Opelika Completion

Drilling activities were ceased last week on the Opelika deep test, Seaboard-Tide Water-Humble No. 2 McElreath & Suggett, with the completion of the well as a distillate producer. After drilling to a total depth of 9,320 feet and testing all intervening horizons the well was plugged back to 8,038 feet and gauged 8,000,000 feet of gas and 13½ bbls. of distillate per hour through one-half inch choke. Recorded pressures were 2,630 pounds on the casing and a shut-in pressure of 3,200 pounds. The gas-distillate ratio here is 27,463 to 1. Operators have not yet announced whether or not they plan to drill a third test with the hope of securing oil in the downdip flank of the Opelika structure.

Southwest Mapping Co., Fort Worth

Regional map showing position of the 9,000-foot test now rigging up in west central Upshur County for a thorough exploration of the Kelsey dome, Tom Hunter and American Liberty Oil Co. No. 1 J. P. Carter is in the J. H. Fields Survey, 1 mile north of Kelsey

EAST TEXAS FIELD COMPLETIONS

East Texas completions with their sand records, and initial 60-minute production (unless otherwise noted) were as follows:

Gregg County

Atlantic Refining Co. No. 26 W. P. Duncan, 3,598-3,683 feet, 88 bbls.; No. 25 D. A. Porter, 3,670-3,764 feet, 54 bbls. F. H. E. Oil Co. No. 24 B. C. Christian, 3,645-80 feet, 63 bbls.; No. 14 J. Flemester, 3,587-3,620 feet, 66 bbls. Gulf Oil Corp. No. 14 Fonville, 3,494-3,553 feet, 72 bbls. Humble Oil & Refining Co. No. 32 Armstrong, 3,557-3,624 feet, 53 bbls. Magnolia Petroleum Co. No. 14 C. E. Davis, 3,570-81 feet, 50 bbls. Selby Oil & Gas No. 14 Ingram, 3,515-31 feet, 76 bbls. Shell Petroleum Corp. No. 4 Lockett, 3,592-3,651 feet, 70 bbls.; No. 31 G. W. Rickey, 3,589-3,609 feet, 74 bbls. Superior Oil Co. No. 25 Ingram, 3,537-75 feet, 50 bbls. J. G. Beard No. 7 Muckleroy, 3,590-91 feet, 80 bbls.; No. 6 Muckleroy, 3,599-3,605 feet, 50 bbls. W. W. Bradley No. 11 S. King, 3,631-34 feet, 50 bbls.; No. 12 S. King, 3,620-21 feet, 50 bbls. L. W. Callender No. 7 Rowland, 3,523-30 feet, 5 bbls. East Whaley Oil Co. No. 3 Elder Brothers, 3,547-60 feet, 60 bbls. J. H. Fleming No. 2 M. E. Church, 3,515-64 feet, 10 bbls. General American No. 16 J. Douglas, 3,644-45 feet, 20 bbls. Gulf Oil Corp. No. 99-B Hilburn, 3,528-42 feet, 50 bbls. E. Pace No. 4 T. Elder, 3,555-64 feet, 53 bbls. Sinclair Prairie No. 9 J. Elder, 3,505-15 feet, 80 bbls. Sun Oil Co. No. 35 Hilburn, 3,658-59 feet, 35 bbls.

Rusk County

Humble Oil & Refining Co. No. 29 B. Laird, 3,663-73 feet, 65 bbls. Patterson Drilling Co. No. 2 Brightwell, 6,332-45 feet, 120 bbls. Pettit & Wooley No. 4 Wooley, 3,685-95 feet, 90 bbls. Royal Petroleum Co. No. 7 Taylor, 3,565-3,603 feet, 24 bbls. West Line Oil Co. No. 5 G. H. Morris, 3,673-74 feet, 30 bbls. American Liberty No. 8 Frederick, 3,560-3,625 feet, 5 bbls. Atlantic Refining Co. No. 14 Griffin, 3,588-3,635 feet, 35 bbls. F. W. Fisher No. 2 Eaton Heirs, 3,737-50 feet, 70 bbls. Gulf Oil Corp. No. 10-A W. P. Keeling, 3,782-99 feet, 30 bbls. Humble Oil & Refining Co. No. 7 L. Hill, 3,738-40 feet, 75 bbls.; No. 66-A M. and R. Kangerga, 3,659-69 feet, 60 bbls.; No. 19 C. Pilgreen, 3,702-64 feet, 60 bbls.; No. 28 C. J. Thompson, 3,664-74 feet, 65 bbls. H. R. Dickerson No. 1 McSpence, 3,720-38 feet, dry and abandoned. Humble Oil & Refining Co. No. 7 J. A. Wilson, 3,733-39 feet, 70 bbls. P. G. Lake No. 7-A J. Lee, 3,775-78 feet, 12½ bbls.

(Continued on Page 90)

Central West

By STAFF CORRESPONDENT

OIL DISCOVERY IN FAYETTE COUNTY, IN ILLINOIS BASIN

MATTOON, Ill., Dec. 13.—The Carter Oil Co. uncovered the first oil production in Fayette County in a test west of Effingham, No. 1 Mary Miller, C W half NW NW section 12-8n-3e. The well pumped 57 bbls. in 17 hours and then mechanical trouble forced a shutdown for repairs. On Saturday the well was pumped again but pump trouble made results unsatisfactory and the operation was again subjected to repairs. The production is believed to be coming from the Chester series. The well had been drilled to 3,170 feet, in the Devonian, but was plugged back to 3,000 feet, still in the Devonian. The importance of the well will be doubtful until a thorough test can be made. In the same county, Benedum & Trees, Inc., No. 1 Van Zandt, SW SW SW section 24-6n-1w, was coring at 2,747 feet. Carter Oil Co. No. 1 Clow, C E half SW NE section 15-8n-3e, was drilling at 205 feet.

Eleven oil wells were completed in the Basin area in the course of the past week.

Completions

In Richland County, O. P. Muleback No. 1 Baker, NW cor. SE NW section 16-3n-9e, had pay at 2,972-74 feet, total depth 2,976 feet, and after shooting with 40 quarts cleaned out to the bottom and acidized with 5,000 gallons and an oil load that filled the hole. It pumped 130 bbls. of oil in 24 hours.

P. L. Hoffman No. 1 Hanna, CNL NW SE section 17-3n-9e, had pay at 2,958-65 feet, total depth 3,000 feet. It pumped 220 bbls. the first 24 hours. It was not shot or acidized.

Louis Goodlin and others No. 1 Garrett, SE SE SE section 8-3n-9e, had Roseclaire sand at 2,912 feet, and pay at 2,958-65 feet, total depth 2,975 feet. It was acidized with 3,000 gallons and pumped 30 bbls. of oil in 24 hours.

Pure Oil Co. No. 1 Francis Coen, C W half SE NE section 8-3n-9e, sand at 2,947-61½ feet, total depth 3,000 feet. It flowed 1,291 bbls. of oil in 24 hours, and 1,204 bbls. per day on the second and third days.

In Clinton County, A. C. McBride No. 1 Schuette, SW SW NE section 3-2n-4w, was abandoned at 1,235 feet. The hole filled with water at 1,225-35 feet. Mississippi lime was topped at 1,162 feet.

In Clay County, Pure Oil Co. No. 2 Leon Clark, SE NW SE section 8-2n-8e, pay at 3,002-07 feet, total depth 3,040 feet. It was acidized with 1,000 gallons and then with 3,000 gallons, and later swabbed 103 bbls. net oil in 24 hours.

Pure Oil Co. No. 1 H. Schrugham, SW NE NW section 27-3n-8e, Ste. Genevieve limestone at 2,921 feet, pay at 2,973-84 feet, total depth 3,014 feet. It was acidized with 1,000 gallons and then with 3,000 gallons, and swabbed 82 bbls. in 24 hours.

Wiser Oil Co. No. 7 D. Smith, NE NE NE section 28-3n-8e, pay at 3,001-12 feet, total depth 3,020 feet, pumped 3 bbls. of oil in 24 hours.

In Wayne County, Benedum-Trees, Inc., No. 1 Rosa Yates, SW NW SE section 33-2n-7e, made a drill stem test at 3,082-3,147 feet and recovered only mud. The hole was abandoned at 3,265 feet.

Pure Oil Co. No. 1 S. S. Gill, NE NE SW section 27-2n-8e, pay at 3,040-56 feet, acidized with 1,000 gallons. The well flowed and swabbed 325 bbls. net oil in 24 hours. Reacidized with 3,000 gallons it was put on the pump and produced 650 bbls. of oil in 24 hours.

Pure Oil Co. No. 1 Fleming A, NE cor. SW SE SE section 8-3n-9e, flowed 133 bbls. the first 24 hours from pay at 2,958-60 feet and 2,980-90 feet.

In Christian County Parshall & Graham No. 1 Yockey, SW SW NE section 36-15n-2w, was drilled to 3,005 feet, finding no oil. It was plugged back to 2,018 feet and acidized with 500 gallons and then with 1,000 gallons. It flowed salt water and some oil for one hour and then subsided. It was plugged back to 1,964 feet and acidized with 1,500 gallons and then swabbed down. It showed a little oil and much water and was abandoned.

Sigel & Schlossberg No. 3 C. W. Glass, CNL NW SW section 29-12n-2w, was dry and abandoned at 1,052 feet. It had a small showing of gas at 830 feet.

In Jasper County, Lewright and others abandoned the location for No. 1 Wilkins, SW SW SW section 36-6n-9e.

In Crawford County, Boyd and others No. 1 Weiman, NW SE NW section 32-7n-12w (measuring from the Indiana principal meridian), is a 25-bbl. pumper from sand at 1,197-1,200 feet, total depth.

In Fayette County, Tull No. 1 Richardson, NE NW NW section 13-4n-1w, was dry and abandoned at 1,601 feet. Mississippi lime was topped at 1,035 feet and Roseclaire sand at 1,558 feet. All the regional formations were present, but were barren.

In Marion County, Palmer and others No. 1 Edwards, NW cor. SE NW section 33-4n-1e, was dry and abandoned at 1,530 feet. Sand at 1,497-1,501 feet was dry.

Adams Oil & Gas Co. No. 1 Hampy, NW cor. SW NE SW section 21-4n-1e, was a 55-bbl. initial pumper from sand at 1,417-25 feet, which had been shot with 15 quarts.

New Operations

First reports of new operations numbered 17, scattered over eight counties, as follows:

In Richland County, Pure Oil Co. No. 2 Francis Coen, C W half NE SE section 8-3n-8e, rigging up rotary; Mammoth Producing & Refining Co. No. 1 Bell, NW NE SW section 28-3n-9w, cellar and pits; Gordon and others No. 1 Lathrop, 1,360 feet from east and 1,065 feet from south lines of section 14-3n-8e, derrick up; J. V. Wicklund No. 1 McCauley A, NE SW NW section 7-2n-9e, cellar and pits; DeKalb Syndicate No. 1 Flora Home Oil Co., C S half NW NE NE section 17-3n-9e, set 10-inch casing at 224 feet; Pure Oil Co. No. 3 Frances Coen, C E half SE NE section 8-3n-9e, derrick up.

In Clay County, Pure Oil Co. No. 3 Leo Clark, NE SW SE section 8-3n-8e, moving in rotary; Wiser Oil Co. No. 1 Irwin Estate, CNL SE NW section 12-2n-7e, a wildcat, derrick up; Campbell and others No. 1 W. Henderson, C N half NE NE section 7-4n-7e, a wildcat, cellar and pits.

In Wayne County, Duncan Brothers No. 3 Riggs, C W half NE SE section 27-2n-8e, drilling at 2,900 feet; Pure Oil Co. No. 3 S. S. Gill, C W half NE SW section 27-2n-8e, derrick up.

Shelby County, Ray M. Farriar and others No. 1 Fritz, NE NE SE section 1-12n-2e, location staked.

In Fayette County, W. V. Greer and others No. 1 Metzgar, C N half NE NW section 19-5n-2e, moving in rotary.

In Edwards County, Harry Cotton and others No. 1 Libke, NE NE SW section 20-1n-14w (measuring from Indiana principal meridian), cellar and pits; same owner's No. 1 Hayes, NE cor. NE NE section 4-1n-10e, cellar. These tests are about 5 miles apart, as Township 1n-14w, measuring from the Indiana principal meridian, is the township east of Township 1n-10e., measured from the Illinois principal meridian, a peculiarity of eastern Illinois surveys.

In Marion County, Evans and others No. 1 R. Moren, SE SE NW section 4-4n-1e, machine.

In Wabash County, Deck & Hayes No. 1, C SE NW section 25-1s-13w, measuring from the Indiana principal meridian, spudded and shut down.

Wells Near Completion

W. B. Frost No. 1 Farris, SW SW SW section 18-3n-10e, in Richland County, will make a drill stem test. It cored saturated sand at 3,065-83 feet. Roseclaire sand was topped at 3,043 feet. Kingwood Oil Co. and McMahon were drilling at 2,667 feet in No. 1 Negley, NW NW SE section 31-5n-9e. Cypress sand was topped at 2,565 feet. Pure Oil Co. No. 1 E. Shannon, NW cor. SW SE SE section 8-3n-9e, has pay at 2,952 feet, total depth at 3,000 feet. Seven-inch casing was set at 2,926 feet and 2½-inch tubing run to 2,926 feet. The crew is swabbing. Morrison & German No. 1 Montgomery, CNL NW NE NE section 17-3n-9e, was at a total depth of 3,000 feet. It had pay at 2,955-87 feet. Five-inch casing will be run. Ypsilanti Oil Co. No. 1 Ansbrook, C N half NE NE section 17-3n-9e, had an oil showing at 2,987-90 feet, total depth 3,017 feet. It was acidized with 2,500 gallons carrying a 115-bbl. oil load, and swabbed 65 bbls. of oil in five hours. Carter Oil Co. No. 5 Watkins, SE SE SE section 33-4n-9e, was drilling at 2,858 feet. Pure Oil Co. No. 2 Correll, SW SE SE section 33-4n-9e, found top of the Ste. Genevieve lime at 2,935 feet, and drilled to 3,017 feet. Seven-inch casing was cemented at 2,957 feet. Carter Oil Co. No. 4 Watkins, SW SW SW section 34-4n-9e, had Ste. Genevieve lime at 2,960 feet, pay at 2,972-89 feet, total depth 2,995 feet. Five-inch casing was cemented at 2,963 feet. Mammoth Producing & Refining Co. No. 1 Brace, SW SE NW section 28-3n-9e, had pay at 3,034-41 feet and flowed by heads 182 bbls. in 24 hours and then quit. It was acidized with 750 gallons and later swabbed 70 bbls. net oil in 24 hours. The hole bridged and a machine was being moved in to clean out. Total depth is 3,046 feet.

In Clay County, Southern Illinois Petroleum Co. No. 1 Nodacker, NW SE SW section 23-3n-7e, was making repairs. It had a small oil showing at 2,718 feet, total depth 2,830 feet. Wiser Oil Co. No. 11 D. Smith, NE SW NE section 28-3n-8e, had saturated Weiler sand at 2,636-38 feet; Bradley sand at 2,874 feet and saturated dolomitic lime at 2,900-06½ feet, total depth 3,013 feet. It was plugged back to 2,895 feet and drilled to 2,930 feet. The well swabbed 10 bbls. of oil in two and one-half hours and a pumping test was to be made. C. H. & C. Oil Co. No. 1 Duff and others, SW NW NE section 7-3n-8e, was allowed to stand 48 hours and in that time filled 600 feet with fluid mostly salt water. It will be plugged back but the proposed plugged-back total depth was not ascertained. Pure Oil Co. No. 7 C. Wilkins, SW SE SE section 28-3n-8e, has pay at 2,968-84 feet and set 7-inch casing at 2,937 feet and run tubing to 2,988 feet. It swabbed 78 bbls. of oil in 24 hours and will be put on the pump. Pure Oil Co. No. 3 Albert Travis in C S half N half SW section 33-3n-8e, flowed 320 bbls. in 16 hours from pay at 2,947-52 feet and 2,960-63 feet. Seven-inch casing was set at 2,931 feet and tubing was run to 2,940 feet. Total depth is 2,978 feet. Bonnie Oil Co. No. 1 Schnautz, SE NW NE section 31-4n-8e, was coring at 3,037 feet in dense, hard lime. Cypress was topped at 2,728 feet.

In Wayne County, Godlin & Huffman No. 1 Riggs, NW SW SE section 27-2n-8e, was at a total depth of 3,001 feet and running 5⅞-inch casing. Same operators' No. 2 Riggs, NW SE SE section 27-2n-8e, was drilling at 1,590 feet, with 10-inch casing set at 171 feet. The Texas Co. No. 1 Sliverman, C E half SW NW section 16-3s-7e, was drilling at 2,300 feet. Midwest Development Co. No. 1 Madden, NE NE NW section 4-1n-7e, was at a total depth of 3,084 feet and was running 7-inch casing. It had a showing of oil in streaks from 3,033 to 3,071 feet. Weiler sand was topped at 2,784 feet. Duncan Brothers No. 2 Riggs, C E half NW SE section 27-2n-8e, was coring at 3,050 feet and no showing of oil. Pure Oil Co. was drilling at 2,240 feet in No. 2 S. S. Gill, SE SE NW section 27-2n-8e. Graham & Duncan No. 1 Riggs, C N half section 34-2n-8e, was drilling at 2,260 feet.

In Christian County, Rogers and others No. 1 Johnson, NE SE SE section 27-12n-2w, had Devonian top at 2,417 feet and was drilling at 2,515 feet.

In Clark County, M. V. Yeager No. 1 Robinson, SE

SW NW section 17-10-11w (measuring from Indiana principal meridian), was running 8-inch casing to 1,224 feet, total depth. Mississippi lime was topped at 1,180 feet.

In Coles County, W. E. Hughes No. 1 Swango, C SW NE section 27-13n-9e, set 12½-inch casing at 60 feet and was shut down at 140 feet.

In Cumberland County, Jolly, Hill, Sipes and others No. 1 Jenkins, SE NE NE section 30-10-9e, was shut down at 2,030 feet to make repairs. It had a water sand at 1,546-61 feet, the base of the Pennsylvania.

In Jasper County, Hoffman No. 1 King, SW NW NW section 20-8n-10e, found the base of the Pennsylvania at 1,675 feet; Cypress at 2,305 feet and was drilling at 2,380 feet in sand.

In Jefferson County, Carter Oil Co. No. 1 Tate, C W half NW NE section 10-1s-2e, drilled to 3,874 feet and finding nothing in the lower levels was plugged back to 2,000 feet and set casing at 1,981 feet. The hole was bailed down 1,600 feet and an oil showing was had. The crew bailed 15 bbls. per hour of fluid with a brackish taste.

Nollem & Benoist No. 1 Kelley, NE NW NE section 25-4s-2e, Jefferson County, was shut down at 1,675 feet, awaiting casing.

In Jasper County, Denver Producing & Refining Co. No. 1 J. Ochs, NW NW NE section 33-6n-14w, was drilling at 1,710 feet.

In Edwards County, Leach Brothers No. 1 A. D. Lee, SW NE SE section 11-1s-10e, was drilling at 2,840 feet.

In Jefferson County, Benedum & Trees No. 1 Owens, NW SW SW section 23-4s-3e, has derrick up.

In Massac County, Kahle and others No. 1 Hardwick, SW SW SW section 23-14s-3e, was shut down at 2,840 feet. Devonian was topped at 1,800 feet.

OHIO

FINDLAY, Ohio, Dec. 13.—Central Ohio producers did not fare so well during the past week, completing 16 dry holes, 11 oil wells and 7 gas wells. The record for the week is as follows:

In Ashtabula County, Conneaut Township, Dillon Oil & Gas Co. No. 5 J. B. Ring, Lot 47, made 25,000 feet of gas from the lime at 1,637 feet. In Plymouth Township, American Fork & Hoe Co. No. 1 W. H. Pancost, Lot 65, was dry in the Austinburg sand 1,857-58 feet. In Saybrook Township, American Fork & Hoe Co. No. 1 Nellie Moody, Lot 55, found Austinburg sand dry at 1,848-49 feet.

In Athens County, York Township, Kachelmacher Oil & Gas Co. No. 1 C. H. Franks, section 10, was dry in Clinton sand 3,382-3,425 feet. In York Township, Kachelmacher Oil & Gas Co. No. 2 Valley Mining Co., SW section 16, drilled through the Big Cinnamon shale and has a dry hole. Total depth 2,250 feet.

In Belmont County, Meade Township, N. C. Phillips No. 1 Herman Taylor, section 32, made 78,000 feet of gas per day from Second Cow Run sand, total depth 920 feet. In Richland Township, Peters & Kirk No. 2 Anton Dvorak, section 2, was dry in the Berea. Total depth 1,736 feet.

In Cuyahoga County, Dover Township, William Dempsey No. 1 W. H. Lawrence, Lot 90, made 116,000 feet of gas from Clinton sand at 2,405-19 feet.

In Guernsey County, Millwood Township, Barnesville Development Co. No. 1 William H. Anderson, section 9, is good for 140,000 feet of gas from Berea at 1,455-65 feet. In Washington Township, Jones & Jewell No. 1 R. L. Davidson, section 8, had a show of gas in the Berea from 1,374-1,402 feet, but was abandoned.

In Knox County, Jackson Township, Pure Oil Co No. 2 Don Miller, SE section 10, made 134,000 feet of gas and 119 bbls. of oil the first 24 hours from Clinton sand at 3,083-3,132 feet.

In Licking County, Franklin Township, Wehrle Gas Co. No. 13 Beatrice Vance, Lot 15, and second quarter, had a small show of oil in the Berea at 730-38 feet. The well will be used as an air intake well on a repressuring project. In Newton Township, J. Bebout & Son No. 3 Artie M. Eshelman, Lot 2, fourth quarter, is a 5-bbl. pumper from Berea at 702-10 feet. In Perry Township, Charles Egan No. 1 Rolla Pound, Lot 8, fourth quarter, was dry in the Berea at 737-61 feet. In Perry Township, George Vandergrift No. 3 Beulah Weigle, NE section 16, produced 10 bbls. of oil the first 24 hours from Berea at 773-85 feet.

In Lorain County, Carlisle Township, Ohio Fuel Gas Co. No. 1 Clark heirs, section 22, was dry and abandoned at 2,383 feet. No Clinton sand was found. In Grafton Township, Wittmer Oil & Gas Co. No. 1 H. B. Belden, Lot 98, drilled to 2,733 feet, but no Clinton sand was found and it was abandoned. In Rochester Township, Kline and others No. 1 Jessie L. Knapp, Lot 29, Tract 5, had a small show of gas in the top of the lime at 1,120-25 feet.

In Meigs County, Lebanon Township, Leroy Holmes and others No. 1 P. B. Wickline, SW section 34, was dry in the Berea at 2,028-29 feet. In Rutland Township. H. M. Nelson No. 3 A. N. Bengel, SE section 3, made 100,000 feet of gas from the Maxon at 795-823 feet. In Rutland Township, Barton and others No. 4 E. M. Molden, section 17, had a hole full of water in the Maxon at 800-19 feet, and was plugged.

In Morgan County, Marion Township, W. S. Harris No. 34 Flora Doan, NW section 13, had 200,000 feet of gas in the Brill sand at 985-99 feet. In Marion Township, Hummel and others No. 8 A. N. Hummel, section 30, is a 1-bbl. pumper at 235-50 feet.

In Muskingum County, Harrison Township, Gas Producing Co. No. 14 Ora Harrop, NW section 2, made 10 bbls. of oil the first 24 hours from Medina sand at 4,139-49 feet. In Licking Township, E. H. Everett No. 3 Gertrude Vroom, Lot 6, third quarter, made 10 bbls. of oil from Clinton sand at 3,235-75 feet.

In Perry County, Pike Township, Clyde Foraker No. 1 Thomas Stafford, section 34, was dry and abandoned in the Clinton at 3,441-91 feet.

In Summit County, Green Township, East Ohio Gas Co. No. 1 F. and H. Bennage, SW section 34, found the Clinton sand dry at 4,320-50 feet, total depth 4,486 feet. In Twinsburg Township, Brooks Johnson No. 2 Harry B. Lamson, NW section 4, had a show of gas but was abandoned at 405 feet.

In Washington County, Aurelius Township, Trapp & Nickels No. 6 Julia Dutton heirs, section 17, is a 1-bbl. pumper at 300-40 feet. In Grandview Township, Knob Oil & Gas Co. No. 6 J. W. Pryor, NE section 21, is good for 16 bbls. of oil at 743 feet. In Liberty Township, Depuy Brothers No. 4 George B. Eppler, SW section 19, was dry in sand at 780-880 feet. In Ludlow Township, Harry Binegar No. 7 L. C. Moore, SE section 25, was dry at 1,440-56 feet. In Newport Township, Schneider Oil Co. No. 6 T. C. Richey, section 28, made a 1-bbl. well at 1,043 feet. In Wesley Township, Schwartz and others No. 106 Emmor Bowman, section 33, is pumping one-fourth of a barrel of oil at 328-45 feet.

WESTERN KENTUCKY

OWENSBORO, Ky., Dec. 13.—Five oil wells, two gassers and three dry holes, a total of 10 completions, was the record of results in western Kentucky counties in the past week.

Breckenridge County

VanZant district: Snowden & McSweeney No. 1 Russell Morgan, dry hole, through Bethel sand, total depth 605 feet. Kentucky Natural Gas Co. No. 1 O. A. Jones, rigging up.

Daviess County

Haynes district: Rex Pyramid Oil Co. No. 5 Rollie Cooper, 1,185,000 feet of gas, 215 pounds rock pressure, Jones sand 608-18 feet.

Red Hill district: Gibson & Anknay No. 4 A. E. Bryant, 25 bbls., Jackson sand 948-1,006 feet, total depth 1,043 feet, shot with 500 pounds of gelatin.

Utica district: Daugherty & Ellis No. 2 F. and Rex O'Flynn, 50 bbls., Lower Jett sand 1,082-87 feet, shot with 20 quarts.

Hancock County

Adair district: DeHart & Lykins No. 1 C. F. Nugent, dry hole.

Indian Lake district: Galey & Fletcher No. 1 J. W. Holder, deep test, drilling 19 feet in Corniferous lime at 1,776 feet, black shale at 1,510-1,756 feet.

McLean County

Livermore district: Cox, Ellis and others No. 1 D. A. Bennett, rigging up. Matthews & Preston No. 3 Hollis Howell, Jett sand 1,130-61 feet, 315,000 feet of gas at 1,130-41 feet; 75 bbls. of oil per day at 1,141-55 feet; a little water at 1,155-61 feet, total depth 1,161 feet.

Knobs district: Kentucky Natural Gas Co. No. 1 E. Nail, rigging up. This is a line well drilling for shallow gas.

Island district: South Penn Oil Co. No. 1 Mrs. Rena Brown deep test, drilling in Corniferous lime at 3,637 feet, oil showing at 3,516 feet, black shale at 3,244-3,511 feet.

Ohio County

Fordsville district: The Petroleum Co. No. 11 W. B. Bellamy, 20 bbls., Barlow sand.

Friendship Church district: A. Teller and others No. 8 A. H. Medcalf, rigging up.

Dundee district: New Deal Oil & Gas Co. No. 13 H. J. O'Dell heirs, dry hole through Jackson sand.

Adaburg district: Rex-Pyramid Oil Co. No. 15 Len Stinnett, 20 bbls., Stray sand, shot 30 quarts at 604-21 feet.

Webster County

Slaughters district: Imperial Oil & Gas Co. No. 1 Archibald Estate, deep test, shut down at 2,250 feet.

Sebree district: I. B. Browning and others No. 6 J. R. Ramsey, deep test, shut down at 300 feet.

EASTERN KENTUCKY

ASHLAND, Ky., Dec. 13.—With an end of the month report swelling the total, completions took a sudden turn upward in eastern Kentucky this week. Included in the report are several gas wells over the million mark and oil wells that are 100-bbl. daily producers or better.

Possibly the well that created the most interest is that brought in by Arthur Bryson, Ashland attorney, on Wilson Creek in Carter County. Jonus Miller, his operator, reported the well as producing 700,000 feet of gas before being shot. This capacity, according to authoritative sources here indicate that the new Wilson Creek field may be one of the best tapped in eastern Kentucky in recent years. Bryson and his associates have considerable acreage under lease there and it is expected that other wells will be drilled soon.

The complete operations by counties are as follows:

Martin County

The Kentucky-West Virginia Gas Co. is fishing at No. 5,226 C. W. Preece land on Coldwater Fork in Martin County, and is down to 955 feet, in sand, in No. 5,234 on the same land. The same firm had reached 315 feet, in sand, in No. 560 Melissa Ward on Rockhouse Fork of Rockcastle.

Virginian Gas & Oil Co. was drilling at 250 feet in No. 1 V-1,255, Nancy J. Cassady on Big Crooked Creek, and is down 100 feet in No. 2 V-1,259 on the same land.

Diedrich & Ware completed No. 3 W. B. Stepp (Amy Pauley) a 6-bbl. well in Maxon sand at 1,323 feet. This well is on Big Crooked.

Hale and others No. 1 Hardin, on Ashlog, was dry and abandoned at 2,803 feet. Hale & Diedrick have moved to location for No. 1 Amos Cassady on Wolf Creek.

Knott County

Warfield Gas Co. made location for No. 4,733 on Alice Smith and others land on Troublesome Creek and for No. 4,777 on George Clark and others land in the same locality. The same firm is building road to Curtis No. 4,778 on the Pigman land nearby, and is at 872 feet in No. 4,772 John A. Jones, on Calhoun Branch.

Inland Gas Corp. is down 2,355 feet, in Maxon sand, in No. 195 Whittaker & Waddell and drilling at 2,619 feet in No. 194 Mayo Craft in slate and shells. Operator Hamilton has completed No. 11-E Balis Everage on Troublesome Creek at a total depth of 2,759 feet. It is a gas well starting at 249,000 feet per day, The same operator completed No. 12-E Hindmas S. School, in the same locality, at 2,835 feet and has a 170,000-foot gasser. Hamilton has moved to the location for No. 14-E Mose Miller on Perkins Branch.

Southeast Gas Co. completed No. 1 Combs & Allen on Jones Fork at 1,420 feet, in Big lime, and it started at 3,010,000 feet of gas daily. The same operator was drilling at 700 feet in No. 2 on the same land.

Floyd County

Fred Williams reports the completion of No. 1 on Mrs. Woods' land at Betsy Layne at a total depth of 1,510 feet, in Big lime, with a daily flow of 2,000,000 feet of gas. The same operator's No. 5 Stanley Heirs, on Levisa Fork, at a total depth of 2,790 feet, in shale, is a 100,000-foot gasser.

Fred Williams completed No. 2 W. Honaker, on Camp Branch, at 1,800 feet. It was good for 25 bbls. of oil daily. Same operator was drilling at 400 feet, in shale, in No. 3 on the same land.

Stephens and others are testing oil in No. 1 Caldwell on Toms Creek. This well is down 1,560 feet. J. Allen and others were drilling at 600 feet in No. 1 Charles Collins on Home Branch.

United Carbon Co. was drilling at 1,120 feet in No. 4 T. B. Williamson, on Levisa Fork, and is on location for No. 5 on same land. Inland Gas Corp. is idle at No. 197 J. C. Hopkins, on Stratton Branch of Levisa Fork.

Operator Hamilton is on location for No. 76-D James Hatcher, on Ivy Creek. The Southeast Gas Co. completed

(Continued on Page 92)

California Field Report

By L. P. STOCKMAN

NEW DEEP ZONE SHOWS OIL IN SANTA FE SPRINGS FIELD

LOS ANGELES, Calif. Dec. 13.—Logging of oil sand in rocks of Miocene age in the extreme western end of the Montebello field, somewhat similar to that found productive in the extreme eastern end of the structure, and the landing of an aluminum liner in Union Oil Co. No. 100 Bell, a deep test in the Santa Fe Springs field, featured developments in California. The new deep zone in Montebello was logged in No. 20 Monterey of St. Helens Petroleum Co. On a formation test with packer set at 6,250 feet, and the tester open for 10 minutes, the well flowed 35.4 gravity oil and an undetermined quantity of natural gas. Oil reached the surface in 6 minutes and with its appearance the period of the formation test was shortened. No. 20 Monterey is bottomed at 6,353 feet and has an 8⅝-inch water string landed at 6,221 feet. Top of the oil sand was at 5,900 feet, but the upper part has been blanked off as the 132 feet in the bottom of the hole looked better and showed more pressure. Two gas traps were rigged up, flow tanks erected and a secondary sump dug preparatory to the test to be made this week No. 20 Monterey is west of a cross fault which bisects the Monterey lease along the east line, and thus St. Helens Petroleum Co. and Standard Oil Co. which control all present productive acreage west of the discovery well, should benefit most. A deep dry hole drilled by Standard Oil Co. about 3,000 feet east of the discovery well, and higher structurally, indicates the new area will be limited to the extreme western end of the structure. A water shut-off test will be made by St. Helens this week and if this approved by the State Mining Bureau a production test will be made at once. The company will deepen No. 19 Monterey if No. 20 results in substantial production.

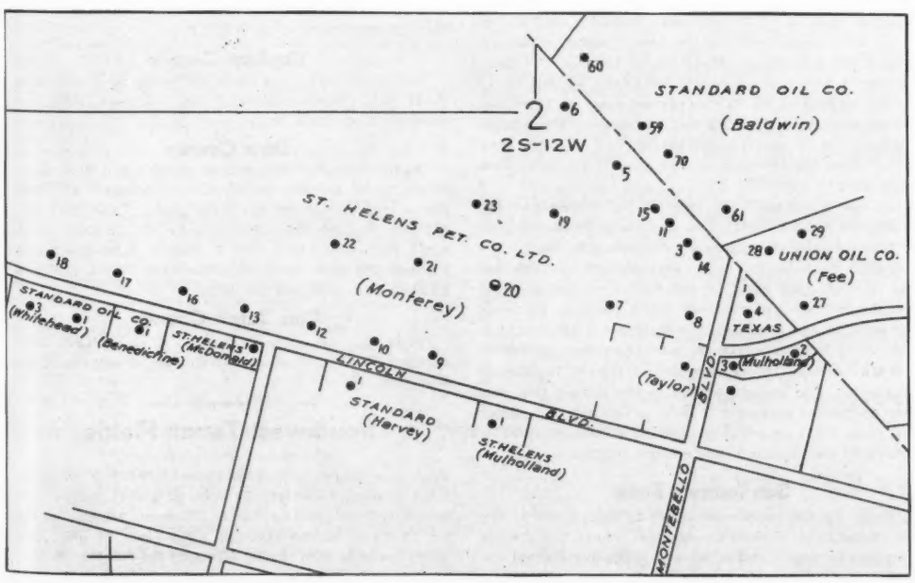
Union Oil Co. will make a production test on No. 100 Bell, a deep test in the Santa Fe Springs field, Los Angeles basin. This well is bottomed at 11,314 feet and has a 6⅝-inch water string landed at 10,217 feet, and 1,180 feet of 3½-inch liner landed at 11,215 feet. This well has shown considerable gas but the company is not any too sanguine about developing substantial production of crude oil in the 99-foot interval which is open below bottom of the liner. Use of an aluminum liner will permit the crew to test the bottom of the hole and then perforate higher up or drill ahead. Of the present productive zones in this field the Foix, Bell, Meyer, Nordstrum, Buckbee, O'Connell and upper Clark zones are in rocks of Pliocene age, whereas the Lower Clark and Hathaway are in the uppermost member of the Miocene. Union Oil Co. No. 100 Bell is believed to be in the lowermost part of the Miocene, approximately 4,200 feet below the top of the Miocene. It is not known whether Union Oil Co. will drill ahead or abandon drilling operations if the projected test on No. 100 Bell proves unsuccessful.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	December 2		November 25			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic:						
Crude oil	.....	.....	.....	.....	129,788	.....
Diesel and gas oil	.....	.....	.....	.....	176,726	.....
Gasoline	119,735	17,105	123,670	17,667	3,910,327	5,493,496
Kerosene	.....	.....	.....	.....	328,907	1,128,379
Foreign exports:						
Crude oil	338,901	48,414	393,976	56,282	14,859,855	8,668,365
Fuel oil	282,994	40,428	256,909	36,701	13,253,813	9,806,905
Diesel and gas oil	185,054	26,436	194,080	27,726	7,575,102	5,481,362
Gasoline	324,307	46,330	428,228	61,175	7,774,519	7,378,725
Kerosene	.....	.....	.....	.....	2,003,872	1,447,371
Lubricants	.....	.....	.....	.....	12,984	.....
Other unfinished oil	53,947	7,850	.....	.....	1,028,732	214,212
Coastwise-domestic:						
Crude oil	135,047	19,292	179,411	25,630	5,416,341	7,052,756
Fuel oil	465,579	66,511	171,086	24,441	14,529,674	10,118,562
Diesel and gas oil	26,289	3,756	41,894	5,985	2,116,341	1,089,022
Gasoline	151,069	21,581	464,246	66,321	14,804,125	11,895,193
Kerosene	6,693	956	.....	.....	424,255	163,537

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	299,315	218,603
Gasoline	.....	.....	125,274	17,896	151,052	285,959
Kerosene	.....	.....	.....	.....	72,750	.....
Asphalt	.....	.....	.....	.....	413,885	327,418
Lubricants	.....	.....	3,026	432	28,548	47,560
Foreign exports:						
Crude oil	172,975	24,711	90,202	12,886	3,233,170	3,142,841
Fuel oil	.....	.....	.....	.....	1,871,261	2,354,929
Diesel and gas oil	1,662	237	58,679	8,383	2,804,045	1,849,928
Gasoline	132,570	18,939	38,005	5,429	5,168,902	3,682,566
Kerosene	.....	.....	29,041	4,149	915,194	614,323
Lubricants	63,768	9,110	52,495	7,499	590,757	362,367
Other unfinished oil	.....	.....	.....	.....	.....	90,923
Coastwise-domestic:						
Fuel oil	65,480	9,354	233,614	33,372	6,063,265	6,060,354
Diesel and gas oil	.....	.....	41,350	5,907	1,360,827	615,988
Gasoline	173,929	24,847	244,238	34,891	5,696,136	5,014,908
Kerosene	.....	.....	24,982	3,569	393,308	203,744



St. Helens Petroleum Co. is believed to have discovered a new productive zone on the Monterey lease in the extreme western end of the Montebello field as No. 20 Monterey located west of a fault has cored approximately 100 feet of Miocene oil sand

Santa Maria

In the Santa Maria Valley the number of additional locations staked in the past fortnight indicates that drilling activity will continue uninterrupted during the next six months. Only three new wells were completed during the current week but Union Oil Co., E. H. Moore, Inc., Pacific Western Oil Co. and other operators will make up for lost time between now and the end of the year. South of the Russell lease where a good well was finished last week Union Oil Co. is completing No. 1 Vicente at 4,818 feet and should also have No. 1 Security ready for a test within 15 days. A. D. Mitchell completed No. 1 Wilson in section 27-10-34, pumping 820 bbls. of 16.3 gravity oil per day from 4,534 feet, and has started rigging up No. 2 Wilson. No. 1 Wilson which topped the Monterey at 4,181 feet and the Franciscan basement at 4,523 feet, was finished with 381 feet of 5¾-inch liner including 337 feet of perforated landed at 4,522 feet. E. H. Moore is drilling in No. 3 Union Sugar with oil under a pressure of 800 pounds. A. N. Macrate one of the pioneers in the Santa Maria Valley field completed his No. 2 Rice for 85 bbls. of 16.5 gravity oil per day on the beam from 2,839 feet, after the hole had been finished with 248 feet of 7-inch liner, including 244 feet of perforated landed at 2,831 feet. No. 1 Rice of Petroleum Properties, Inc., in section 19-10-33 has been completed, pumping 150 bbls. per day from 2,200 feet after the hole had been plugged back from 2,321 feet and finished with 947 feet of 5-inch perforated liner.

El Segundo

Wilshire Oil Co. No. 9-1 Elsie in the El Segundo field was completed flowing 1,730 bbls. of clean 23.6 gravity oil per day, with bottom of the hole in Schist at 7,208 feet. The Schist was topped at 7,005 feet and the hole finished with a 6⅝-inch water string landed at 6,997 feet. The upper part of the main Schist member is fractured and contains oil sand, shale and conglomerate from which production is secured. Wilshire's No. 9-2 Elsie was completed, flowing 1,825 bbls. of clean 23.7 gravity oil per day from 7,261 feet. The fractured Schist was topped at 7,045 feet and the hole finished with a 6⅝-inch water string. Standard Oil Co. No. 4 Refinery,

finished at 7,474 feet, refuses to flow despite swabbing and bailing operations. It will either be put on the beam or a compressor installed. The company is drilling in No. 6 Refinery with oil and has completed derrick for No. 8 Refinery. The Ramsey interest, Sunshine Oil Co. is nearing completion depth in four wells.

Wilmington

With 90 drilling permits issued by the Long Beach Harbor Commission the Long Beach Harbor section of the Wilmington field will close the year in an aggressive manner. Superior Oil Co. has spudded No. 1 Community and Allied Petroleum Corp. and Caminol Co. Ltd. have completed rigs for their respective wells. Bankline Oil Co. is rigging up No. 2 U. P. and General Petroleum Corp. has completed rigs for No. 1 Blinn, No. 3 Channel, No. 2 S. P. and Nos. 1 and 6 on the Harbor Community lease. Gus Pongratz completed No. 1 Webb Community at 3,686 feet, and with 716 feet of oil sand this outpost in the northwestern end of the field appears assured of excellent production. Development work in the town lot section within the confines of Los Angeles is practically completed but with the eastern end of the Wilmington field being opened up this district will sustain activity for another several months. Production averages around 63,000 bbls. per day and if the Long Beach section of the field comes up to expectations production should exceed 75,000 bbls. per day early in 1938.

General Petroleum Corp. headed the week's completion list in Wilmington bringing in No. 5-A Isco, flowing 826 bbls. of clean 15.7 gravity oil per day from 3,500 feet, after the hole had been carried down to 5,717 feet and plugged back. The hole was finished with 1,068 feet of 8⅝-inch liner carrying perforations at 2,560-2,960 feet and 3,040-3,500 feet and was cemented through perforations at 2,559 feet. Union Pacific Railroad Co. completed No. 54 Offset, flowing 310 bbls. of clean 17.8 gravity oil per day from the Terminal zone and 150 bbls. daily from the Ranger zone. It was bottomed at 3,484 feet, tubing pressure 185 pounds and casing pressure 570 pounds. The company's No. 68, finished in the Ranger zone at 2,967 feet with 521 feet of 6⅝-inch liner carrying perforations at 2,462-2,549 feet, 2,570-2,784 feet and at 2,805-2,957 feet, was brought in flowing 376 bbls. of clean 16.1 gravity oil daily. Allied Petroleum Corp. No. 26 Wilmington has been completed, pumping 330 bbls. of clean 16.8 gravity oil daily from 3,629 feet.

The Long Beach Harbor Commission has asked for bids to develop city owned acreage in the eastern end of the field and expects to award contracts early in 1938. Bids were asked on five acres east of the harbor entrance channel, a tract south of Seaside avenue from the harbor entrance to Riverside avenue and the water front south of Riverside avenue, and east of Riverside avenue to the flood control channel. Specifications call for the drilling of 17 wells on the five acres.

Long Beach

Shell Oil Co. cored 55 feet of fair to good looking oil sand in No. 1 Hathaway an outpost in the eastern end of the Long Beach field and this well may bear watching. Shell has leased most of the surrounding acreage, but will have some offsetting to do if commercial production is developed and the productive area covers more than 100 acres. This promising outpost is coring ahead in oil sand at 4,405 feet at present. In the northwest end of the Long Beach field Union Oil Co. completed No. 3 Oil Operators, pumping 365 bbls. of clean 25.6 gravity oil daily from 4,076 feet, and 300,000 feet of natural gas. No. 2 Oil Operators a directional drilled well is in the pay at 4,034 feet. Hildon Oil Co. which proved up the existence of commercial production west of the Los Cerritos section of the Long Beach field staked location for No. 4 Bixby and plans for immediate work. Rains of the past few days will retard work but the company should get under way within the next week. In the older section of the field Richfield Oil Co. has completed No. 4 McKeon pumping 71 bbls. of 24.1 gravity oil cutting 7 per cent from 4,400 feet.

Rosecrans-Dominguez

Barnsdall Oil Co. chalked up an excellent completion in the Rosecrans field of Los Angeles basin when No. 18 O'Dea was brought in flowing 1,210 bbls. of clean 33.6 gravity oil and 800,000 feet of natural gas per day from 7,595 feet. This well, which is flowing through a thirty-five sixty-fourths-inch bean, was finished with 372 feet of 5½-inch liner including 346 feet of perforated landed at 7,593 feet. In its deep test at Rosecrans, Union Oil Co. has reached a depth of 8,793 feet in No. 35 Howard Park. Barnsdall Oil Co. has erected a rig for No. 19 O'Dea and Union Oil Co. is grading for No. 18 Rosecrans. In the Dominguez field, Union completed two new wells during the past week and should have two more potential producers ready for tests within another 15 days. No. 56 Callender located in the northwestern end of the field has been completed flowing 1,580 bbls. of 31.4 gravity oil per day from 7,300 feet after the well had been carried down to 9,620 feet and then plugged back to the completion depth. The well was completed in the Eighth Callender zone. No. 51 Callender of Union Oil Co. was completed in the First Callender zone at 4,350 feet and showed an initial production of 260 bbls. of clean 30.1 gravity oil on the beam.

Potrero

In the Potrero field, Tide Water Associated Oil Co. plugged back No. 4 Cypress from 5,813 feet to 4,301 feet and completed it, flowing 110 bbls. of clean 50.1 gravity oil and 400,000 feet of natural gas per day through a thirty-five sixty-fourths-inch beam, tubing pressure of 200 pounds and casing pressure 675 pounds. The Potrero field was discovered by Tide Water Associated Oil Co. several years ago and while a number of wells were completed during the ensuing development program none of them held up.

In the Yorba Linda section of the Richfield district, Beverly Hills Petroleum Co. completed No. 1 Fricke pumping 151 bbls. of 14.4 gravity oil cutting 5 per cent daily from 1,914 feet. This well was given a preliminary production test several weeks ago but sanded up soon after completion. The Yorba Linda area is being watched very closely because Shell Oil Co. recently secured production in two holes that were drilled as structure survey wells.

Kern County

Shell Oil Co. completed another excellent well in the Ten Section field when No. 36-A Kern County in section 30-30-26 was brought in flowing 3,850 bbls. of clean 34.5 gravity oil and 3,730,000 feet of natural gas per day from 8,199 feet. Tubing pressure is 1,100 pounds and casing pressure is 1,150 pounds.

In the Round Mountain field Marcan Oil Co. completed No. 1 C. L. in section 12-28-28, pumping 446 bbls. of 15.5 gravity oil cutting 3 per cent daily, from 1,947 feet. This new well was finished with 60 feet of 6⅝-inch liner including 44 feet of perforated. California Western Oil Co. No. 9 in section 12-28-28 is bottomed at 1,969 feet and made ready for a production test. In the Mount Poso field Ring Oil Co. completed No. 3 Shapiro in section 32-26-28 pumping 348 bbls. of very clean 15.8 gravity oil daily from 1,760 feet. In the Premier section of the Mount Poso field Ted Martin completed No. 2 in section 17-28-27 pumping 110 bbls. of 15.1 gravity oil cutting 2.5 per cent daily from 2,917 feet.

Two new wells and one recompletion resulted in the Midway-Sunset field of Kern County during the week. The recompletion was U. S. Pumping Equipment Co. No. 2 in section 12-11-24, which was returned to production pumping 94 bbls. of 14.1 gravity oil, cutting 5 per cent after the hole had been deepened to 1,774 feet, plugged back to 1,730 feet, and finished with 145 feet of 6⅝-inch liner, including 125 feet of 180 mesh screen. Gibson Oil Co. in the Maricopa section of the field, finished a well with an initial production of 99 bbls. of clean 18.9 gravity oil. It was carried down to 2,810 feet but plugged back to 2,408 feet and put on production. Pattiway Oil Co. No. 3 in section 12-11-24 has been completed pumping 180 bbls. of 13.1 gravity oil daily from 1,596 feet.

In the Mountain View field Vesta Petroleum Co. completed No. 12 Hopkins in section 19-30-29 pumping 86 bbls. of very clean 22.6 gravity oil daily from 5,100 feet after the hole had been carried down to 5,129 feet and then plugged back. In the Fruitvale field General Petroleum Corp. recompleted No. 4 Hensley pumping 102 bbls. of 18.6 gravity oil daily from 3,974 feet, but apparently has not solved the water problem as production was cutting 18 per cent at last report. Westbrook Oil Co. No. 1 in section 4-30-29 in the Edison field has been completed pumping 74 bbls. of 15.8 gravity oil per day from 3,557 feet but production of this outpost is cutting 24 per cent and may require further work.

San Joaquin Basin

Union Oil Co. completion of its discovery well in the Rio Bravo field of Kern County last month has greatly stimulated activity and if present plans are carried out several additional wells will be started in the immediate future. Superior Oil Co. which recently spudded in No. 1 Wagner one location southeast of Union's discovery well is now preparing to drill an east offset on the Geisinger lease in section 35-28-25 and rig should be on ground soon. George F. Getty, Inc. is also making plans to undertake development work in this area and has staked location southeast of the discovery well. Union Oil Co. spudded in No. 2-34 Kern County Land northwest of the discovery a few days ago but it will be another 60 days before it will be possible to correlate subsurface conditions in order to note the trend of the structure. Continental Oil Co. has landed a string of 7-inch casing in its No. 2-A Kern County Land in the Wasco district of Kern County and should be in a position to resume work within the next few days. This wildcat is down 11,584 feet but has been delayed for the past few months because of a fishing job. Seaboard Oil Co. is expected to resume drilling operations in its No. 1-C Kern County Land in the Wasco district of Kern County within another fortnight. This wildcat located southeast of Continental Oil Co. deep tests has been standing suspended at 10,243 feet for the past several months. Decision to resume work on this test reflects completion of Union Oil Co. deep discovery well at Rio Bravo which is producing from 11,302 feet.

East Texas Fields

(Continued from Page 86)

Milford Oil Co. No. 11 M. A. Thrash, 3,710-30 feet, 80 bbls. Turman Oil Co. No. 11 Deason Brothers, 3,697-3,733 feet, 33 bbls.

Upshur County

Ellis Oil Co. No. 21 Mackey, 3,695-96 feet, 20 bbls. General American No. 15 Sheppard, 3,652-56 feet, 84 bbls. W. R. Nicholson No. 4 fee, 3,709-14 feet, 12 bbls.; No. 3 fee, 3,685-87 feet, 15 bbls. W. L. Pickens No. 4 L. P. League, 3,570-72 feet, 39 bbls. Sun Oil Co. No. 5 Mackey, 3,688-89 feet, 40 bbls.

EAST CENTRAL TEXAS COMPLETIONS

Completions in East Central Texas with their sand records and initial 24-hour production, were as follows:

Angelina County

Petroleum Heat & Power Co. No. 1 Southern Pine, wildcat test east of Diboll, dry and abandoned at 2,502 feet.

Franklin County

At Talco, Byers-King No. 2 State, 4,250-90 feet, pumped 285 bbls. Byrd-Frost No. 2 Sanders, 4,235-94 feet, 52 bbls. L. S. Flannery No. 10 Hendrick, 4,295-4,315 feet, 539 bbls. Humble Oil & Refining Co. No. 48 King, 4,241-4,315 feet, 335 bbls. O'Neill and Rotundi No. 3 Bolin, 4,262-92 feet, 354 bbls. Stroube and Stroube No. 6 Hendricks, 4,268-4,306 feet, 361 bbls.; same operators' No. 1 Banks, J. Bowsman Survey, dry and abandoned at 4,361 feet.

Henderson County

Tide Water, Seaboard and Humble No. 2 McElreath and Suggett, deep Opelika prospect, was completed last week as a gas and distillate producer, gauging 8,000,000 feet of gas with 13½ bbls. of distillate per hour through one-half inch tubing choke, total depth 8,038 feet, plugged back from 9,320 feet.

Hopkins County

An unsuccessful northern extension to the Sulphur Bluff field, Abbott-Ruthland No. 1 Payton, has been abandoned at 4,502 feet.

Titus County

In the Titus County portion of the Talco field, Byrd-Frost No. 5 Belcher, 4,281-98 feet, pumped 173 bbls. Houst and Thompson No. 8 Hargrove, 4,182-4,245 feet, 367 bbls. Humble Oil & Refining Co. No. 53 King, 4,150-4,313 feet, 276 bbls.; No. 1 Oliver, 4,201-4,312 feet, pumped 460 bbls. Lucey Petroleum Co. No. 12 Williams, 4,230-65 feet, pumped 460 bbls.

Van Zandt County

Pure Oil Co. No. 3 McMahon, 2,852-2,926 feet, pumped 15 bbls. of oil in the shallow sand area of the Van pool.

Southwest Texas Fields

(Continued from Page 69)

water, one-fourth inch choke. Saxet field: J. E. Freeman No. 1 Kovner, 6,750 feet, 75 bbls. oil and 15 bbls. of salt water, one-eighth inch choke; Hiawatha Oil & Gas Co. No. 14 Hutchins and Stillwell, 6,945 feet, 131 bbls. five-thirty seconds inch choke; Houston Oil Co. No. 33 Morgan, 4,570 feet, gas well; Richardson Petroleum Co. No. 3 Harrell, 6,996 feet, perforated casing 5,758-76 feet, 187 bbls. per day, three-sixteenths inch choke; Richardson Petroleum Co. No. 7 Perkins-LaGasse, 6,924 feet; 99 bbls. per day, three-sixteenths inch choke.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S. T. R.	Depth	Status—
Richfield Oil, No. 2 SF El Segundo, Los Angeles Co.	7- 3-14	7,381	sd. sh. drlg.
Richfield Oil, No. 1-M, El Segundo, Los Angeles Co.	12- 3-15	7,235	Schist; drlg.
Richfield Oil, No. 2-M, El Segundo, Los Angeles Co.	12- 3-15	6,540	sd. sh. drlg.
Richfield Oil, No. 1-R, El Segundo, Los Angeles Co.	18- 3-14	6,592	sd. sh. drlg.
Sunshine Oil, No. 1 G. W. El Segundo, Los Angeles	12- 3-15	6,918	sd. sh. drlg.
Sunshine Oil, No. 1 C. W. El Segundo, Los Angeles	12- 3-15	7,289	Schist; drlg.
Sunshine Oil, No. 2 C. W. El Segundo, Los Angeles	12- 3-15	6,970	sd. sh. drlg.
Sunshine Oil, No. 1-W El Segundo, Los Angeles	12- 3-15	7,135	Schist; drlg.
Tide Water A. O., No. 1 El Segundo, Los Angeles	9- 3-14	8,009	dry; abd.
Ohio Oil, No. 10 Gough, El Segundo, Los Angeles Co.	7- 3-14	6,640	sd. sh. drlg.
Standard Oil, No. 4 Refinery, El Segundo, L. Angeles	13- 3-15	7,474	completing
Standard Oil, No. 5 Refinery, El Segundo, L. Angeles	13- 3-15	7,185	sd. sh. drlg.
Standard Oil, No. 6 Refinery, El Segundo, L. Angeles	13- 5-15	7,098	sd. sh. drlg.
Standard Oil, No. 7 Refinery, El Segundo, L. Angeles	13- 3-15	3,251	sd. sh. drlg.
Howard Oil, No. 1 El Segundo, Los Angeles Co.	12- 3-15	6,130	sd. sh. drlg.
Lakeside Oil, No. 10-1 Elsie, El Segundo, L. Angeles	12- 3-15	6,797	sd. sh. drlg.
Wilshire Oil, No. 9-1 Elsie, El Segundo, L. Angeles	12- 3-15	7,208	Schist; drlg.
Wilshire Oil, No. 9-2 Elsie, El Segundo, L. Angeles	12- 3-15	7,261	Schist; drlg.
Standard Oil, No. 12 Rubel, Inglewood, Los Angeles	17- 2-14	2,531	rig to pump
Standard Oil, No. 84 LAI, Inglewood, Los Angeles	17- 2-14	2,876	sd. sh. drlg.
C. C. M. Oil, No. 33-T Torrance, Los Angeles Co.	16- 6-14	4,751	hd. sd. drlg.
Kavanaugh, E. C., No. 1 Palos Verdes, Los Angeles	17- 4-14	5,240	recmtd. 5,175
Rolling Hills Pet. Co., No. 1 Palos Verdes, L. Angeles	27- 4-14	1,195	sd. sh. drlg.
Tide Water A. O., No. 4 Cypress, Potrero, Los Angeles	34- 2-14	5,813	P. B. 4,301
Shell Oil, No. 92 Reyes, Dominguez, Los Angeles Co.	33- 3-13	7,732	flow 25 b.d.
Union Oil, No. 51 Callender, Dominguez, Los Angeles	33- 3-13	4,350	pump 330 b.d.
Union Oil, No. 56 Callender, Dominguez, Los Angeles	33- 3-13	9,625	P. B. 7,300
Union Oil, No. 57 Callender, Dominguez, Los Angeles	33- 3-13	7,389	sd. sh. drlg.
Union Oil, No. 10 Carson, Dominguez, Los Angeles	33- 3-13	7,068	sd. sh. drlg.
Selbar Oil, No. 1 Harris, Dominguez, Los Angeles Co.	33- 3-13	4,905	redrlg. 2,772
Barnsdall Oil, No. 18 O'Dea, Rosecrans, Los Angeles	18- 3-13	7,595	flow 1,190 b.d.
Union Oil, No. 35 H.P. Rosecrans, Los Angeles Co.	18- 3-13	8,660	sd. sh. drlg.
Texas Co., No. 5-1 Gardena, Los Angeles Co.	30- 3-13	3,398	sd. sh. drlg.
Barnsdall Oil, No. 2-S.F. Newhall, Los Angeles Co.	26- 4-17	5,193	hd. sd. drlg.
Burt, A. G., No. 1 Newhall, Los Angeles Co.	26- 4-17	2,471	hd. sd. drlg.
Towsley Canyon Oil, No. 1 Newhall, Los Angeles Co.	8- 3-16	4,030	sd. sh. drlg.
Royal Lands, No. 1 Ramona, Castaic, Los Angeles Co.	8- 4-17	821	hd. sd. drlg.
General Pet., No. 5 Isco, Wilmington, Los Angeles	4- 5-13	5,717	P. B. 3,500
General Pet., No. 9-T Wilmington, Los Angeles Co.	4- 5-13	2,252	sd. sh. drlg.
General Pet., No. 11-T Wilmington, Los Angeles Co.	4- 5-13	2,531	sd. sh. drlg.
Allied Pet., No. 26 Wilmington, Los Angeles Co.	32- 4-13	3,629	sd. sh. drlg.
Bankline Oil, No. 7-D.H. Wilmington, Los Angeles Co.	34- 4-13	3,311	sd. sh. drlg.
Bankline Oil, No. 12-D.H. Wilmington, Los Angeles	34- 4-13	3,105	cmtd. 3,060
Bankline Oil Co., No. 2 J.C. Wilmington, Los Angeles	34- 4-13	2,695	sd. sh. drlg.
Baker Oil, No. 1 Wilmington, Los Angeles	35- 4-13	3,502	redrlg. 2,541
Black Gold, No. 6 Wilmington, Los Angeles Co.	33- 4-13	2,989	sd. sh. drlg.
Caminol Co., No. 2 Comm. Wilmington, Los Angeles	32- 4-13	3,600	O. S. drlg.
Colter & McAdoo, No. 2 Wilmington, Los Angeles Co.	32- 4-13	2,295	sd. sh. drlg.
Krieger Oil, No. 1 K.W. Wilmington, Los Angeles Co.	32- 4-13	2,450	sd. sh. drlg.
Neilson & Co., No. 2-B Wilmington, Los Angeles Co.	32- 4-13	3,146	sd. sh. drlg.
Pongratz, Gus, No. 1 Webb, Wilmington, Los Angeles	32- 4-13	3,498	sd. sh. drlg.
Royalty Serv., No. 1-F Wilmington, Los Angeles Co.	33- 4-13	2,241	sd. sh. drlg.
Royalty Serv., No. 1-H Wilmington, Los Angeles Co.	32- 4-13	3,611	sd. sh. drlg.
Royalty Serv., No. 1-K Wilmington, Los Angeles Co.	33- 4-13	3,647	sd. sh. drlg.
Selegna Drlg., No. 10 Wilmington, Los Angeles Co.	33- 4-13	5,930	sd. sh. drlg.
Superior Oil, No. 1-C Wilmington, Los Angeles Co.	2- 5-13	983	sd. sh. drlg.
Union Pacific R.R., No. 52 Wilmington, Los Angeles	34- 4-13	2,596	sd. sh. drlg.
Union Pacific R.R., No. 53 Wilmington, Los Angeles	34- 4-13	2,850	sd. sh. drlg.
Union Pacific R.R., No. 54 Wilmington, Los Angeles	4- 5-13	3,484	flow 310 b.d.
Union Pacific R.R., No. 59 Wilmington, Los Angeles	4- 5-13	3,436	sd. sh. drlg.
Union Pacific R. R., No. 61 Wilmington, Los Angeles	4- 5-13	2,318	sd. sh. drlg.
Union Pacific R.R., No. 62 Wilmington, Los Angeles	33- 4-13	1,973	sd. sh. drlg.
Union Pacific R.R., No. 66 Wilmington, Los Angeles	34- 4-13	3,358	sd. sh. drlg.
Union Pacific R.R., No. 68 Wilmington, Los Angeles	34- 4-13	2,967	flow 380 b.d.
Union Pacific R.R., No. 69 Wilmington, Los Angeles	34- 4-13	2,598	sd. sh. drlg.
Union Pacific R.R., No. 74 Wilmington, Los Angeles	34- 4-13	1,955	sd. sh. drlg.
Wilbur, V. R., No. 2-S.F. Wilmington, Los Angeles	33- 4-13	3,691	C. P. 3,000
Wilmington Oil, No. 2 Wilmington, Los Angeles Co.	32- 4-13	3,250	sd. sh. drlg.
Alford Oil, No. 3-C.Y. Wilmington, Los Angeles Co.	22- 4-13	4,175	sd. sh. drlg.
Ramsey, W. E., No. 1 Repetto Hills, Los Angeles Co.	27- 1-12	1,066	sd. sh. drlg.
Davis, T. R., No. 1 Garvey Ranch, Montebello, L. A.	22- 2-11	581	sd. sh. drlg.
Texas Co., No. 18 Baldwin, Montebello, Los Angeles	5- 2-11	5,441	hd. sd. drlg.
St. Helens Pet., No. 20-M Montebello, Los Angeles	6- 2-11	6,353	O. S. drlg.
Union Oil, No. 2 Flood Control, Los Angeles Co.	13- 4-13	4,034	sd. sh. drlg.
Union Oil, No. 3 Flood Control, Los Angeles Co.	13- 4-13	4,076	completing
Abrams, John, No. 1 Flood Control, Los Angeles Co.	13- 4-13	3,215	sd. sh. drlg.
Texas Co., No. 14 Harlow, Long Beach, Los Angeles	19- 4-12	4,650	cleaning out
Shell Oil, No. 1 Hath, Long Beach, Los Angeles Co.	28- 4-12	4,250	gr. sd. drlg.
Rico Pet., Inc., No. 1 Long Beach, Los Angeles	30- 4-12	4,080	redrlg. 3,996
Richfield Oil, No. 11 Denni, Long Beach, Los Angeles	29- 4-12	2,754	sd. sh. drlg.
Richfield Oil, No. 6-M.D. Long Beach, Los Angeles	29- 4-12	1,571	sd. sh. drlg.
Union Oil, No. 100 Santa Fe Springs, Los Angeles Co.	6- 3-11	11,315	sd. sh. drlg.
Texas Co., No. 7-W Santa Fe Springs, Los Angeles	6- 3-11	6,380	sd. sh. drlg.
Continental Oil, No. 40 Bixby, Seal Beach, Orange	2- 5-12	7,501	P. B. 6,556
Lido Pet., No. 2 Severns, Huntington, Orange Co.	34- 5-11	4,405	redrlg. 4,065
Shell Oil, No. 4-1 Columbia, Olinda, Orange Co.	9- 3- 9	7,850	hd. sd. drlg.
Brea Canyon Oil, No. 36 Brea Canyon, Orange Co.	2- 3-10	4,552	fish D. P.
Standard Oil, No. 127 Murphy, West Coyote, Orange	18- 3-10	3,240	cmtd. 3,224
Severns Drlg., No. 2 McNally, West Coyote, Orange	18- 3-10	7,272	cleaning out
Union Oil, No. 29 Chapman, Richfield, Orange Co.	29- 3- 9	9,050	sd. sh. drlg.
Oil Income, No. 1 Anderson Yorba, Orange Co.	22- 3- 9	1,803	tested wet
Hjorth & Mohr, No. 1 Yorba, Orange Co.	22- 3- 9	1,403	P. B. 1,345
Berco Oil, No. 1 Milhous, Yorba, Orange Co.	22- 3- 9	1,565	hd. sd. drlg.
Angelus Oil, No. 1 Jacobs, Yorba, Orange Co.	22- 3- 9	1,685	recmtd. 1,600
Mid-State Pet., No. 1 Dutton, Yorba, Orange Co.	22- 3- 9	1,176	sd. sh. drlg.
Oliver & Spradling, No. 1 Moritz, Yorba, Orange Co.	22- 3- 9	1,096	sd. sh. drlg.
Shell Oil, Core Hole F. Yorba, Orange Co.	16- 3- 9	2,325	flow 500 b.d.
Bachmann Pet., No.1 Page, Yorba, Orange Co.	22- 3- 9	1,620	bailing
Shell Oil, No. 1-H Anaheim, Orange Co.	9- 4-10	8,176	gr. sd. drlg.

STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	Oct. 31, 1937	Sept. 30, 1937	Oct. changes	Oct. 31, 1936
1 Fuel oil residuum and non-gasoline-bearing crude	64,502,327	63,199,156	+1,303,171	64,751,132
2 Gas oil and diesel oil	7,266,217	6,909,395	+ 356,822	8,588,725
3 Gasoline-bearing crude	30,261,980	30,642,228	— 380,248	33,874,512
4 Unblended natural gasoline	2,041,658	2,210,146	— 168,488	1,965,151
5 Gasoline (not including distributing and service stations)	11,561,625	10,930,937	+ 630,688	11,470,745
6 Naphtha distillates	*1,692,231	*1,946,166	— 253,935	*1,880,125
7 All other stocks	†6,045,366	†5,935,837	+ 109,529	†8,455,380
Total	123,371,404	121,773,865	+1,597,539	130,985,770
*Estimated amount of unfinished gasoline contained in item No. 6	1,417,212	1,582,224		1,526,703
†Coke included in item No. 7	33,241	46,571		282,992

THESE 3 EAGLE BEARING METALS

will fill 95% of all your requirements

EAGLE DREADNAUGHT

Tough metal for bearings subject to extreme speed and heavy pressure.

EAGLE OUTLASTA

General service metal for bearings where even speed and pressure conditions prevail.

EAGLE DURABLE

A No. 4 bearing metal for all less severe bearing requirements.

● These three Eagle Bearing Metals are made of the best grades of refined primary metals. Toughness and structure are uniform always. They contain no hard spots to cut and score the shaft . . . they will not grip or weld to the shaft if bearings become heated . . . they will conform to shaft irregularities.

● Eagle Bearing Metals are sold exclusively through recognized jobbers.

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Other Eagle Products for the Oil Fields include: Eagle Lead Wool and Containers, Eagle Rope Socket Metal, Eagle Sheet Lead, Eagle Sublimed Litharge, Eagle Sublimed Blue Lead, and a complete line of efficient Insulating Materials.

Central West Fields

(Continued from Page 88)

No. 3 Joseph Dillon at 1,156 feet, in Maxon sand, in same locality. The well started at 1,896,000 feet of gas per day.

The Kentucky-West Virginia Gas Co. reports the completion of No. 557 Ingram Stepp, on Johns Creek, at a total depth of 2,690 feet, in White slate, with flow of 369,000 feet of gas per day. The same firm is down 1,638 feet, in Injun sand, in No. 3 John Layne, at mouth of Camp Branch of Levisa Fork. Kentucky-West Virginia Gas Co. is building rig on the Jennie Caldwell farm on Levisa Fork and is rigging up at No. 5,667 Samuel Dilling land, on Ivy Creek of Levisa Fork. The same firm is drilling at 2,045 feet in No. 5,229 John W. Woods land, on Porter Branch.

Pike County

United Carbon completed No. 1 C. C. Scott on Johns Creek in Pike County at 1,428 feet, in Big Lime. The well showed 1,648,000 feet of gas daily. Bee Whitis is down 3,025 feet in No. 2 Sol Johnson land on Island Creek.

The Mountain Oil & Gas Co. made location for No. 1 O. A. Alley on Blackberry Creek.

Lee County

Petroleum Exploration reports the completion of No. 16 Pryse Heirs on Duck Fork in the Ida May district of Lee County. This well made 100 bbls. of oil the first 18 hours.

Thomas Whitmer completed No. 6 C. J. Tipton at 473 feet, good for 8 bbls. of oil per day. McCown & Wissing were drilling at 610 feet in No. 8 Andrew Combs. Both of these wells are on Billie's Fork.

Magoffin County

Operator Jenkins completed No. 1 John Adams on Short Fork in Magoffin County at 1,168 feet, in Weir sand. Before it was shot the well made 6 bbls. of oil per day. Bed Rock Petroleum reports No. 13 on J. J. Prater land on Prater Fork of Mash Fork has been connected to tanks. Hope Oil Co. is idle on No. 1 Lee Kimbleton. Jenkins & Evans drilled a dry hole in No. 1 Josephus Howard on Licking River.

Carter County

Arthur Bryson, operator, completed No. 1 on Burton farm on Wilson Creek at 315 feet with a completed log showing 700,000 feet of gas per day.

Lawrence County

Kentucky Oil Producers are rigging up No. 2 John Rose, on Keaton Creek, in Keaton district of Lawrence County. Rockcastle Gas Co. completed No. 1 J. W. Hall on Mill Branch at 2,489 feet, in shale. It produced gas at a daily rate of 719,000 feet.

Perry County

Hazard Gas Co. is skidding rig at 1,710 feet in No. 1 John Watts on Macer Creek.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Dec. 11.—Alberta crude and naphtha production for October, according to official figures, totaled 325,723 bbls. (10,507 bbls. per day), establishing a new record, and comparing with 281,154 bbls. (9,371 bbls. per day) in September. Turner Valley limestone production increased from 277,783 to 322,237 bbls., and Turner Valley shallow crude from 869 to 928 bbls. Red Coulee light crude was up from 1,113 to 1,133 bbls., and Wainwright heavy crude declined from 1,236 to 1,143 bbls. Dina heavy crude increased from 153 to 282 bbls.

Turner Valley production throughout October was prorated at 65 per cent, and for November was under 45 per cent and later 35 per cent proration; in spite of which November totals are expected to show a further increase.

Commoil No. 1, LSD 15, section 29-18-2w5, finished in the lime at 7,475 feet, made 1,278 bbls. on the first day and 1,163 bbls. on the second day of a 48-hour test, flowing through 6⅝-inch casing with no tubing and no back pressure. Tubing has been run and the well is being acidized. Located a half mile west and considerably down the flank from the earlier crude producers, it is expected to establish a new production figure after acid treatment.

National Petroleum Corp. No. 1, S half LSD 8, section 29-18-2w5, finished with cable tools in the lime at 7,217 feet, flowed 10 to 15 bbls. an hour through 6-inch casing while drilling, and is cleaning out and making definite production test. With 3,500 bbls. storage on the lease, two tanks of 5,000 bbls. and two of 1,000 bbls. each are being erected. Tubing will be run and the well acidized.

In section 32-18-2w5, West Flank Oil Co. No. 1, LSD 1, finished 450 feet in the lime at 7,150 feet, is testing production after recementing 6-inch casing. It started flowing by heads but after a few hours developed a settled flow. It will likely be tubed and acidized.

Tests in the Lime

In the same section, West Flank Oil Co. No. 3, LSD 8, a quarter mile north of No. 1, got the Madison at 6,429 feet and has resumed drilling after cementing casing at 6,450 feet.

In section 28-18-2w5, Richland Royalties No. 2, LSD 5, got the Madison limestone at 6,410 feet and is preparing to deepen after cementing 6-inch casing at 6,420 feet.

In section 20-18-2w5, Royal Canadian Oils No. 1, LSD 15, is below 7,226 feet after getting the Madison at 6,960 feet and cementing at 6,975 feet. It is expected to get production around 7,450 feet. Sunset Oils No. 1, LSD 10, same section, is below 7,082 feet after getting the lime at 7,017 feet and cementing casing at 7,035 feet. It is logging 13 feet lower than Commoil No. 1, previously the deepest test on the west flank.

West Side Drilling

In west central Turner Valley, Brown Oil Corp. No. 3, LSD 15, section 19-19-2w5, is in the top of the Dalhousie sand below 6,107 feet.

West Flank Oil Co. No. 2, N half LSD 1, section 32-18-2w5, is below 6,110 feet and should get the Madison inside 350 feet. West Flank No. 4, W half LSD 1, has derrick up. West Flank No. 6, W half LSD 8, has cellar finished. Drilling will start as soon as the rotary outfits from the company's earlier wells are available.

In section 21-18-2w5, Barsac Royalties No. 1, LSD 12, is below 1,575 feet. Brown Oil Corp. No. 4, LSD 4, is below 2,700 feet.

In section 20-18-2w5, Spy Hill Royalties No. 1, LSD 16, is below 5,106 feet.

In section 19-18-2w5, about a mile west of the producing area, Scottish Petroleums No. 1, LSD 16, is below 207 feet after cementing surface casing at 195 feet.

In section 9-18-2w5, National Petroleum Corp. No. 2, LSD 14, is rigging rotary outfit from No. 1 producer, to resume from 3,005 feet where 10¾-inch casing was set. Location is a mile almost due south of Brown Oil Corp. No. 1, the nearest producer, and nearly 4 miles south of Royal Crest No. 1, the most northerly producer in the west flank crude area. Farther south, Mid Royal Oils No. 2, LSD 3, section 9-18-2w5, has spudded. It is the first test to drill south of the Highwood River.

In section 33-17-2w5 Davies Petroleums No. 3, LSD 7, has derrick partly rigged and is laying gas and water lines. It will likely spud this month.

New Tests Starting

An important new test, sponsored by the Anglo Canadian Development & Holding Co., will be drilled in section 31-18-2w5, on acreage offsetting the Roxana holdings in section 32-18-2w5, and a mile due west of Royalite Oil Co. No. 4 Sterling Pacific. This is the most westerly test yet started in the north end of the crude area.

In the south end of the field, Sundance Royalties No. 1, LSD 9, section 17-18-2w5, is rigging rotary outfit, and will likely spud this month. Coronation Royalties No. 1, LSD 15, same section, is working on cellar. Frontier Royalties No. 1 has been spotted in LSD 11, section 16-18-2w5.

In section 20-18-2w5, York Oils is arranging for drilling of its No. 1 in LSD 2 and No. 2 in LSD 8, both on acreage of Okalta Oils, Ltd.

Okalta Operations

West of the proven field, Okalta Oil Co. No. 6, LSD 3, section 30-18-2w5, is below 3,000 feet.

In the southwest extension to the field, Okalta Oil Co. No. 7 is working on derrick in LSD 3, section 16-18-2w5, offsetting National Petroleum Corp. No. 2 to the north. Okalta No. 8 has been located in LSD 6, same section, offsetting Richwell Oil Co. No. 1 to the east and north. Rotary tools will be used for both tests. United Oils No. 5 has been located on Okalta acreage in LSD 1, section 20-18-2w5, offsetting Prairie Royalties No. 1 to the north. Brown-Moyer-Brown Co. will have an interest in this test, which has derrick up and will spud this month.

North Turner Valley

In North Turner Valley, Phillips Royalties No. 1, LSD 16, section 16-18-2w5, bottoming at 4,120 feet, is cleaning out.

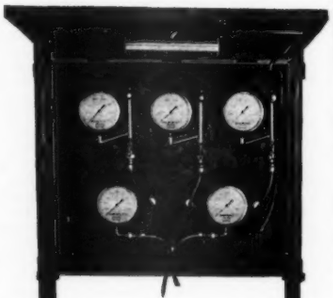
Royalite Oil Co. No. 29 Turner Basin, LSD 7, section 27-20-3w5, is below 6,102 feet and getting close to the lime.

Home Oil Co. No. 1 Millarville, LSD 8, section 33-20-3w5, bottoming at 7,602 feet, is fishing for lost bit.

Turner Valley Situation

On the Turner Valley west flank there are now some 25 wells with substantial crude production, and an aggregate potential of around 8,000,000 bbls. a year. Production is still prorated on a 35 per cent basis, with actual deliveries around 10,000 bbls. a day. There are 36 additional wells drilling, temporarily shut down or located, in the crude area. Several of the drilling tests are likely to finish this month. The crude ranges from 43 to 53 gravity, at $1.42 to $1.62 a barrel.

Reduced freight rates will facilitate marketing of the crude throughout the prairie provinces, while the new 4-inch loop on the Royalite Oil Co. pipe line to Calgary is expected to be finished by December 25, permitting a daily pipe line movement of approximately 14,000 bbls. Imperial Oil, Ltd., has completed a new 55,000-bbl. storage tank in the field and a number of producers and prospective producers are expanding their storage facilities to take care of test oil. The possibility is foreshadowed that, unless the anticipated completions prove to be unexpectedly large producers, proration will be on a 50 per cent basis by the end of the year.



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This new Marshalltown Drilling Rig Gauge Panel is portable and illuminated. It protects the gauges from the heat of the boilers, the vibration of the pumps, as well as corrosion by the elements. Live steam cannot reach the gauges because of the water leg in the piping. Test gauge connections are installed on the board. Flexible connections allow for quick installation. Stirrups provide for 2" iron pipe standards.

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WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S. T. R.	Depth	Status—
Hancock-Bush, No. 2-C.L. Santa Maria, Santa Barbara	30-10-33	4,353	fish. D.P.
Hancock-Bush, No. 3-H Santa Maria, Santa Barbara	30-10-34	2,291	sd. sh. drlg.
Petroleum Prop., Inc., No. 1-R Santa Maria, Santa B.	19-10-33	2,321	P. B. 2,200
Sunshine Oil, No. 2-W Santa Maria, Santa Barbara	27-10-34	3,632	sd. sh. drlg.
Jones, Frank, No. 1 Santa Maria, Santa Barbara Co.	26-10-34	5,197	sd. sh. drlg.
Moore, E. H., No. 3 Sugar, Santa Maria, Santa B.	24-10-34	5,175	sd. sh. drlg.
Moore, E. H., No. 4 Sugar, Santa Maria, Santa B.	19-10-34	5,145	sd. sh. drlg.
Moore, E. H., No. 5 Sugar, Santa Maria, Santa B.	25-10-35	4,806	sd. sh. drlg.
Pet. Sec., No. 1-R Santa Maria, Santa Barbara Co.	35-10-34	3,381	sd. sh. drlg.
Signal Oil, No. 1-H Santa Maria, Santa Barbara	26-10-34	3,990	sd. sh. drlg.
Union Oil, No. 1 Vicente, Santa Maria, Santa B.	21-10-34	4,818	sd. sh. drlg.
Union Oil, No. 2 Bradley, Santa Maria, Santa Barbara	25-10-34	1,876	rd. sh. drlg.
Union Oil, No. 1 Sec., Santa Maria, Santa Barbara	20-10-34	2,991	sh. sh. drlg.
Union Oil, No. 2 LeRoy, Santa Maria, Santa Barbara	24-10-34	5,293	pump 250 b.d.
Union Oil, No. 17 Cal. Coast, Orcutt, Santa Barbara	26- 9-34	4,086	sd. sh. drlg.
Getty, George F., No. 1-V, Santa Maria, Santa Barbara	27-10-34	4,494	flow 1,190 b.d.
Pac. West. Oil No. 5-H Santa Maria, Santa Barbara	21-10-34	4,798	rig to pump
Pac. West. Oil, No. 6-H Santa Maria, Santa Barbara	27-10-34	2,192	sd. sh. drlg.
Pac. West. Oil, No. 1-S Santa Maria, Santa Barbara	27-10-34	4,837	flow 2,143 b.d.
Pac. West. Oil, No. 2-D.P. Santa Maria, Santa Barbara	27-10-34	4,114	fish D. P.
Crude Oil Drlg., No. 1 Casmalia, Santa Barbara Co.	19- 9-34	1,410	sd. sh. drlg.
Standard Oil, No. 1 Cat Canyon, Santa Barbara Co.	27- 9-33	1,752	sd. sh. drlg.
Field, O. C., No. 2 Gato Ridge, Santa Barbara Co.	4- 8-32	4,210	hd. sh. drlg.
United West. Oil, No. 1 Olivos, Santa Barbara Co.	16- 7-30	2,691	br. sh. drlg.
Texas Co., No. 134 Shiells, Ventura Co.	4- 3-19	4,288	gr. sd. drlg.
High Mesa Oil, No. 1 Ojai, Ventura Co.	16- 4-22	1,099	fish. bailer
Richfield Oil, No. 1 McFarland, Camarillo, Ventura	13- 2-21	5,671	gr. sd. drlg.
South Cal Drlg., No. 1 McFarland, Camarillo, Ventura	26- 2-21	2,800	sd. sh. drlg.
Texas Co., No. 1 Edwards, Camarillo, Ventura Co.	19- 2-21	3,150	sd. sh. drlg.
Arnett, F. E., No. 3 Santa Paula, Ventura Co.	15- 4-21	1,165	br. sh. drlg.
Stallings & Senter, No. 1 Timber Canyon, Ventura	24- 4-21	188	sd. sh. drlg.
Section 20 Oil, No. 1 Sespe, Ventura Co.	20- 5-19	995	hd. sh. drlg.
Speik Oil, No. 2 Sespe, Ventura Co.	33- 5-19	3,400	sd. sh. drlg.
Colima Oil, No. 2 Sespe, Ventura Co.	25- 5-19	3,500	fishing
Topa Topa Oil, No. 3 Sespe, Ventura Co.	33- 5-19	4,502	P. B. 3,300
Skyline Oil, No. 1-H Hopper Canyon, Ventura Co.	13- 4-18	1,850	cleaning out
Continental Oil, No. 8 Grubb, San Miguelito, Ventura	24- 3-24	3,937	abd.
C. C. M. Oil, No. 2 Padre Canyon, Ventura Co.	23- 3-24	6,625	swabbing
Continental Oil, No. 4 Padre Canyon, Ventura Co.	15- 3-24	5,980	pump 95 b.d.
C. C. M. Oil, No. 11 Rincon, Ventura Co.	17- 3-24	4,056	O. S. drlg.
Vaca Oil, No. 1 Lennox, Oxnard, Ventura Co.	6- 1-21	2,990	sd. sh. drlg.
Tide Water A. O., No. 19 V.L.W., Ventura, Ventura	26- 3-23	2,000	rd. sh. drlg.
Tide Water A. O., No. 32 V.L.W., Ventura, Ventura	24- 3-23	6,675	O. S. drlg.
Tide Water A. O., No. 69 Lloyd, Ventura, Ventura	27- 3-23	3,430	sd. sh. drlg.
Tide Water A. O., No. 135 Lloyd, Ventura, Ventura	27- 3-23	7,750	hd. sh. drlg.
Tide Water A. O., No. 138 Lloyd, Ventura, Ventura	23- 3-23	5,665	sd. sh. drlg.
Tide Water A. O., No. 18 Hartman, Ventura, Ventura	22- 3-23	8,976	sd. sh. drlg.
Tide Water A. O., No. 27 Hartman, Ventura, Ventura	22- 3-23	6,575	pump 25 b.d.
Shell Oil, No. 92 Taylor, Ventura Ave., Ventura Co.	20- 3-23	7,531	sd. sh. drlg.
General Pet., No. 13 Notten, Ventura Ave., Ventura	28- 3-23	9,250	sd. sh. drlg.
Tide Water A. O., No. 10-E-3 Lost Hills, Kern Co.	3-26-20	2,403	dry; abd.
Tide Water A. O., No. 9-C-W Lost Hills, Kern Co.	11-26-20	1,401	sd. sh. drlg.
Standard Oil, No. 7 United, Lost Hills, Kern Co.	2-26-20	1,294	pump 50 b.d.
Amerada Pet., No. 5 Beer, Devils Den, Kern Co.	22-26-19	5,000	br. sh. drlg.
Franco-Western Oil, No. 14 McKittrick, Kern Co.	8-30-22	2,173	P. B. 2,160
Par Mer Oil, No. 1 McKittrick, Kern Co.	6-31-22	1,975	br. sh. drlg.
Standard Oil, No. 2 Randolph, Semi-Tropic, Kern Co.	14-27-23	7,951	sd. sh. drlg.
Continental Oil, No. 2 KCL, Wasco, Kern Co.	8-27-24	11,584	fish. D. P.
Belridge Oil, No. 27-7 North Belridge, Kern Co.	27-27-20	1,995	sd. sh. drlg.
Belridge Oil, No. 27-8 North Belridge, Kern Co.	27-27-20	5,724	fish D.P.
Belridge Oil, No. 27-61 North Belridge, Kern Co.	27-27-20	6,361	br. sh. drlg.
Belridge Oil, No. 28-1 North Belridge, Kern Co.	28-27-20	5,012	br. sh. drlg.
Tide Water A. O., No. 2 Reward, N. Belridge, Kern	34-27-20	4,483	P. B. 4,389
Tide Water A. O., No. 7 Reward, N. Belridge, Kern	34-27-20	6,275	br. sh. drlg.
Tide Water A. O., No. 1-21 North Belridge, Kern Co.	21-27-20	5,831	br. sh. drlg.
Tide Water A. O., No. 2-21 North Belridge, Kern Co.	21-27-20	3,640	br. sh. drlg.
Richfield Oil, No. 1-A North Belridge, Kern Co.	22-27-20	3,594	sd. sh. drlg.
Texas Co., No. 2 Martin, North Belridge, Kern Co.	22-27-20	5,384	hd. sh. drlg.
General Pet., No. 1 St. Helens, Belridge, Kern Co.	12-28-20	4,875	sd. sh. drlg.
Crestmont Oil, No. 1 Staley, Round Mountain, Kern	8-28-29	1,136	sd. sh. drlg.
Link Trucking, No. 1 Round Mountain, Kern Co.	30-28-29	1,695	cleaning out
Cal-Western Oil, No. 9 C. C., Round Mountain, Kern	12-28-28	1,969	O. S. drlg.
Vedder, D. G., No. 1 McDonald, Round Mtn., Kern Co.	12-28-28	1,886	pump 408 b.d.
Rowepet Oil, No. 1 Round Mountain, Kern Co.	24-28-28	1,797	sd. sh. drlg.
Standard Oil, No. 27 Kern Front, Kern Co.	15-28-27	2,230	gr. sd. drlg.
Shell Oil, No. 22 Security, Kern Front, Kern Co.	16-28-27	996	sd. sh. drlg.
California Star Oil, No. 3-80 Kern Front, Kern Co.	22-28-27	2,755	rig to pump
Kern River Oilfields, No. 25-3-B, Kern Front, Kern	25-28-27	2,051	O. S. drlg.
Ring Oil, No. 3 Shapiro, Mount Poso, Kern Co.	32-26-28	1,760	pump 340 b.d.
Sunset Oil, No. 3-1 Wells, Mount Poso, Kern Co.	3-27-28	1,484	sd. sh. drlg.
Texas Co., No. 6 Glide, Mount Poso, Kern Co.	15-27-28	1,768	O. S. drlg.
Travis, P. J., No. 1 Giffen, Mount Poso, Kern Co.	10-27-28	1,435	dry; abd.
Bargol Oil, No. 3 Newhope, Mount Poso, Kern Co.	11-27-27	1,243	idle
Pebble Beach Oil, No. 6 Newhope, Mount Poso, Kern	29-27-27	2,491	gr. sd. drlg.
Framac Oil, No. 1 Brown, Mount Poso, Kern Co.	22-27-27	1,351	cleaning out
Summit Oil, No. 1 Glide, Mount Poso, Kern Co.	31-27-28	2,397	sd. sh. drlg.
Western Gulf Oil, No. 29-B KCL, Fruitvale, Kern Co.	14-29-27	3,033	flow 390 b.d.
Western Gulf Oil, No. 5-R.R., Fruitvale, Kern Co.	14-29-27	3,725	O. S. drlg.
Section Six Oil, No. 1 Johnstone, Mtn. View, Kern	6-31-29	7,030	sd. sh. drlg.
American Expl., No. 1-G Mountain View, Kern Co.	18-30-29	4,776	cleaning out
Hogan Pet., No. 5 Symons, Mountain View, Kern Co.	4-31-29	6,129	P. B. 5,975
Hogan Pet., No. 5 Bankline, Mountain View, Kern	4-31-29	5,176	sd. sh. drlg.
General Petroleum, No. 1 Houchin, Arvin, Kern Co.	27-31-29	7,928	P. B. 7,415
General Petroleum, No. 1 Pauly, Arvin, Kern Co.	22-31-29	1,692	sd. sh. drlg.
Petrex, Inc., No. 1 Arvin, Kern Co.	32-31-30	1,971	sd. sh. drlg.
Superior Oil, No. 1 Wagner, Rio Bravo, Kern Co.	35-28-25	1,922	sd. sh. drlg.
Union Oil, No. 2-34 KCL, Rio Bravo, Kern Co.	34-28-25	1,000	sd. sh. drlg.
Continental Oil, No. 1 Rosedale, Kern Co.	12-29-26	10,210	redrlg. 8,175
Superior Oil, No. 1 Krause, Greeley, Kern Co.	21-29-26	7,515	sd. sh. drlg.
Superior Oil, No. 9 KCL, Greeley, Kern Co.	3-30-26	7,870	cleaning out
Superior Oil, No. 10 KCL, Greeley, Kern Co.	3-30-26	7,850	hd. sh. drlg.
Standard Oil, No. 11-2 KCL, Greeley, Kern Co.	20-29-26	8,339	cleaning out
Standard Oil, No. 11-8-A KCL, Greeley, Kern Co.	18-29-26	5,590	sd. sh. drlg.
Standard Oil, No. 11-9 KCL, Greeley, Kern Co.	20-29-26	7,797	flow 3,417 b.d.
Standard Oil, No. 11-11 KCL, Greeley, Kern Co.	17-29-26	7,386	sd. sh. drlg.
Standard Oil, No. 11-12 KCL, Greeley, Kern Co.	20-29-26	5,791	sd. sh. drlg.
Standard Oil, No. 17-1 KCL, Greeley, Kern Co.	9-29-26	7,650	sd. sh. drlg.
Standard Oil, No. 15-1 KCL, Ten Section, Kern Co.	27-30-26	7,910	gr. sd. drlg.
Shell Oil, No. 8-28-A KCL, Ten Section, Kern Co.	28-30-26	8,857	P. B. 8,178
Shell Oil, No. 36-30-A KCL, Ten Section, Kern Co.	30-30-26	8,199	sd. sh. drlg.
Shell Oil, No. 27-30-B KCL, Ten Section, Kern Co.	30-30-26	5,176	sd. sh. drlg.
Shell Oil, No. 72-14-A KCL, Strand, Kern Co.	14-30-25	2,674	sd. sh. drlg.
Standard Oil, No. 1 Magunden, Kern Co.	2-30-29	5,496	sd. sh. drlg.
C. C. M. Oil, No. 55-21 Midway-Sunset, Kern Co.	21-32-23	2,752	P. B. 2,325
Hallmark Oil, No. 9 Midway-Sunset, Kern Co.	25-12-24	2,701	fish bailer
Signal Oil, No. 4 Kendon, Midway-Sunset, Kern Co.	35-32-23	961	sd. sh. drlg.
Standard Oil, No. 127-33-D Midway-Sunset, Kern Co.	33-32-24	2,930	O. S. drlg.
Victor Oil, No. 14 Midway-Sunset, Kern Co.	35-32-23	1,173	sd. sh. drlg.
Ethel D. Oil, No. 21-A Midway-Sunset, Kern Co.	36-12-24	609	sd. sh. drlg.
National Oil, No. 30 Midway-Sunset, Kern Co.	35-32-23	2,192	rig to pump
Texas Co., No. 1 Pioneer, Midway-Sunset, Kern Co.	33-11-23	5,385	gr. sd. drlg.
Texas Co., No. 25 Midway-Sunset, Kern Co.	32-32-24	3,170	P. B. 3,131
Texas Co., No. 28 Midway-Sunset, Kern Co.	32-32-24	3,276	P. B. 3,220
Texas Co., No. 29 Midway-Sunset, Kern Co.	32-32-24	3,015	sd. sh. drlg.
Richfield Oil, No. 3-H-A Elk Hills, Kern Co.	1-31-24	3,015	bailing
Ohio Oil, No. 2-D Tejon, Kern Co.	23-11-19	3,800	sd. sh. drlg.
Universal Oil, No. 1 Tejon, Kern Co.	33-11-19	4,098	hd. sh. drlg.
Honolulu Oil, No. 33-1 SP, Tejon, Kern Co.	33-12-19	4,000	sd. sh. drlg.
Pure Oil, No. 1 Cantua, Fresno Co.	31-18-17	8,825	sd. sh. drlg.
Dauphin Dev., No. 1 Alcade, Fresno Co.	30-21-14	2,896	gr. sh. drlg.
Jacalitos Oil, No. 1 Jacalitos, Fresno Co.	14-21-15	5,200	sd. sh. drlg.
K. N. D. A., No. 4-18-J Kettleman North, Fresno Co.	18-21-17	11,746	fish D. P.
K. N. D. A., No. 67-20-J Kettleman North, Fresno Co.	20-21-17	8,560	will deepen
K. N. D. A., No. 43-34-J Kettleman North, Fresno Co.	34-21-17	7,960	swabbing
K. N. D. A., No. 83-4-P Kettleman North, Fresno Co.	4-22-17	7,600	sd. sh. drlg.
K. N. D. A., No. 27-12-P Kettleman North, Kings Co.	12-22-17	7,460	hd. sh. drlg.
K. N. D. A., No. 38-12-P Kettleman North, Kings Co.	12-22-17	6,607	hd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St. sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting for cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

K. N. D. A., No. 6-6-Q Kettleman North, Kings Co.	6-22-18	8,690	sd. sh. drlg.
K. N. D. A., No. 27-6-Q Kettleman North, Kings Co.	6-22-18	8,595	sd. sh. drlg.
Standard Oil, No. 27-21-J Kettleman North, Fresno	21-21-17	8,015	sd. sh. drlg.
Standard Oil, No. 27-33-J Kettleman North, Fresno	33-21-17	8,530	sd. sh. drlg.
Standard Oil, No. 2-11-P Kettleman North, Kings Co.	11-22-17	7,571	sd. sh. drlg.
Standard Oil, No. 76-1-P Kettleman North, Kings Co.	1-22-17	7,020	br. sh. drlg.
Standard Oil, No. 21-13-P Kettleman North, Kings	13-22-17	5,290	sd. sh. drlg.
Superior Oil, No. 5 Huffman, Kettleman N., Fresno	29-21-17	10,335	fish D. P.
Bandini Pet., No. 5 Whepley, Kettleman N., Fresno	35-21-17	8,387	milling 7,983
Temblor Oil, No. 1-B Kettleman Middle, Kings Co.	25-23-18	9,100	hd. sh. drlg.
Amerada Pet. Co., No. 1 Carano, Los Banos, Merced	19-10-11	6,362	hd. sh. drlg.
Little Cuyama Oil, No. 1 Adelaide, San Luis Obispo	3-10-26	3,515	sd. sh. drlg.
Standard Oil, No. 2 Weyl, McDonald Isl., San Joaquin	25- 2- 4	6,530	gr. sd. drlg.
Standard Oil, No. 1 Morris, Tulare Co.	36-24-23	10,665	hd. sh. drlg.
Wilcox, J. F., No. 1 Sears, Tulare Co.	29-24-28	1,000	sd. sh. drlg.
Empire O. & G., No. 1 Woodland, Yolo Co.	8- 9- 3	300	sd. sh. drlg.
Wilshire Oil, No. 1 Half Moon Bay, San Mateo Co.	20- 6- 5	5,021	sd. sh. drlg.
Ohio Oil, No. 1 Willard, Glenn Co.	18-20- 2	2,003	sd. sh. drlg.

KANSAS

Week Ending December 11 (Descriptions are East unless marked otherwise)

Barber County

Helmerich & Payne No. 1 Winter, NW SW sec. 16-32-10w. Set 12-in. 105 ft.; W.O.C.
Kansas Oil Corp. No. 1 Mease, NE SE SE sec. 27-30-11w. T.D. 4,448 ft.; S.S.O.
Palmer Oil Corp. et al No. 1 Warwick, C NW sec. 29-31-10w. Rig.
Pryor & Lockhart No. 1 Pickens, CWL E½ SW sec. 34-30-13w. Drlg. 2,355 ft.

Barton County

Elmer Ash et al No. 1 Frees, NW cor. sec. 34-16-11w. U.R. 12-in. 765 ft.
R. E. Day et al No. 1 Felts, SE SE NE sec. 14-16-12w. Drlg. 480 ft.
Lauck & Moncrief and Vernon O. & G. Co. No. 1 Rodenburg, NE SE SW sec. 6-17-12w. Drlg. 2,310 ft.
Martin & Foraker et al No. 1 Dick Est., NE SW SW sec. 31-19-11w. Rig.
C. L. Price No. 1 Hammeke, NE NE SW sec. 12-18-12w. Sil. 3,415-27 ft.; 1,800 ft. O.I.H.; balls 4 bbls. wtr. every other day.
Shell Pet. Corp. No. 1 Eckart, SE SE SW sec. 13-16-14w. Drlg. 1,780 ft.
Shell Pet. Corp. No. 1 Ehrlich, SW cor sec. 1-16-14w. Sil. 3,267 ft.; T.D. 3,296 ft.; swb. 24 B.O. in 1 hr.
Thayer Drlg. Co. et al No. 1 Soderstrom, SE NW sec. 21-17-13w. Drlg. 390 ft.

Butler County

T. S. Dustin No. 1 Miley, SE NW NE sec. 17-27-5e. Drlg. 395 ft.
Steinbuchel et al No. 1 Fox, NW SE NE sec. 25-26-3e. C.O. 755 ft.

Chautauqua County

Harrison No. 1 Brown, NE SE NE sec. 19-34-10. S.D. 820 ft.
I. W. Siegel No. 1 Temple, SW cor. sec. 31-32-12. Drlg. 400 ft.

Clark County

Olson Oil Co. No. 1 Lehman, SE SW sec. 20-32-31w. Drlg. 3,001 ft.
Olson Oil Co. et al No. 1 Watkins, SW NW sec. 23-32-21w. R.U.S.T. 5,311 ft.

Cowley County

Arthur Brewer No. 1 Shepard, NE NE SE sec. 20-32-4e. Miss. L. 3,041-61 ft.; D.&A.
Dickey Oil Co. No. 1 Kansas G. & E., NE cor. sec. 22-34-3e. Drlg. 2,850 ft.
Murta & Wilson et al No. 1 Stuber, SE NE NE sec. 27-30-5e. Drlg. 2,380 ft.
Pryor & Lockhart No. 1 Brown, NE SE SE sec. 34-33-2e. Sil. 3,853-64 ft., T.D.; P.B. 3,403 ft.; C.O. 3,402 ft.
Roth et al No. 1 Fry, NW SW SW sec. 8-31-3e. Drlg. 1,540 ft.
Smith & Price No. 1 Henderson, SW SW sec. 25-32-6. S.D. 2,800 ft.
Earl Wakefield No. 1 Whitson, SW NE SE sec. 8-32-4e. Drlg. 1,985 ft.

Ellis County

Bradley Oil Co. No. 1 Jenson, NW NW SE sec. 36-11-19w. Cg. 3,710 ft.
C. L. Carlock No. 1 Heyle, SE NW sec. 14-13-16w. Drlg. 732 ft.
Colonial Oil Co. and Bernheimer No. 1 Albert, SW SW NE sec. 31-12-18w. U.R. 7-in. 3,515 ft.
Continental Oil Co. No. 1 Baumrucker, NE SW sec. 25-14-16w. Drlg. 3,030 ft.
General Mach. & Tool Co. No. 1 Jensen, SW SE NE sec. 26-12-18w. C.O. 2,933 ft.
Helmerich & Payne No. 1 Stebbins, NW SE sec. 7-13-20w. Drlg. 3,598 ft.
J. J. Muth et al No. 1 Penney, C N½ NE SE sec. 29-14-18w. C.O. 350 ft.
P. G. Reynolds et al No. 1 Karlin, NW cor. sec. 15-12-18w. S.D. 3,607 ft.
Watchorn O. & G. Co. No. 1 Brown, NE SE sec. 34-13-17w. Drlg. 2,802 ft.

Ellsworth County

Colonial Oil Co. No. 1 Hogy, NW cor. sec. 16-16-10w. Drlg. 425 ft.
Hinkle et al No. 1-A Andrea, NE SE sec. 7-17-10w. Drlg. 2,190 ft.
Ralph Wixson et al No. 1 Peterman, SW cor. sec. 28-17-10w. Drlg. 425 ft.

Ford County

Olson Oil Co. et al No. 1 Fowler, C SW sec. 26-27-22w. T.D. 5,907 ft.; D.&A.

Greenwood County

John Nichols et al No. 1 Central Life, SE SW sec. 35-25-12. Spd. and S.D.
Whittaker & Johnson No. 1 Cannon, CEI SE NW sec. 8-26-13. T.D. 1,504 ft.; rng. 5-in.

Harvey County

Allison et al No. 1 Hawks, SE SW-NE sec. 16-24-1w. H.F.W. 3,145-49 ft.; rng. 6-in.

Jackson County

Lemmick Oil Co. No. 1 Marble Savings Bank, NE cor. sec. 26-9-14. Spd. and S.D.

Jewell County

Hollingsworth Bros. No. 1 Wolfe, NE SW SE sec. 14-4s-8w. Spd. and S.D.

Marion County

Tom Palmer, Inc. No. 1 Matz, SW SE SE sec. 8-19-1e. Rng. 8-in. 2,825 ft.

McPherson County

Boyle & Grossman No. 1 Diener, SE SE NE sec. 35-19-1w. Drlg. 2,760 ft.
Carter Oil Co. No. 1 Hoglund, C W½ SW NW sec. 8-17-3w. Drlg. 2,857 ft.
Dole-Park Dev. Co. No. 1 Doles, NE NW NE sec. 12-19-1w. Set 6-in. 3,072 ft.; C.O.
Phillips Pet. Co. No. 1 Galle, NW NE sec. 11-21-2w. Drlg. 3,275 ft.

Meade County

Pacific Mid-West Co. No. 1 Rexford, NE SE SW sec. 8-30-29w. Drlg. 950 ft.

Ness County

Continental Oil Co. No. 1 Olson, SW NW SE sec. 5-18-25w. Drlg. 3,727 ft.
Marshall Drlg. Co. et al No. 1 Anderson SW NW sec. 23-16-24w. Spd. and S.D.
Trojan O. & G. Co. No. 1 Moses, C SW NW sec. 10-18-25w. S.D. 500 ft.
Trojan O. & G. Co. No. 1 Page Milling Co., SE SE NW sec. 36-18-26w. Fsg. 3,265 ft.

Pawnee County

Phillips Pet. Co. No. 1 Johnson, C NE NW sec. 8-20-19w. S.D. 4,056 ft.
Stanolind O. & G. Co. and Amerada Pet. Corp. No. 1 Jantz, SW cor. sec. 25-20-16w. Sil. 3,804 ft.; T.D. 3,822 ft.; P.B. 3,817 ft.; W.O.C.

Phillips County

C. W. Davidson et al No. 1 Elliff, SE NE NE sec. 35-5-18w. S.D. 575 ft.

Pratt County

Helmerich & Payne et al No. 1 Hoeme, SE NE sec. 20-26-12w. Drlg. 735 ft.
Skelly Oil Co. et al No. 1 Adams, SE NW NE sec. 2-28-11w. Wilcox 4,287 ft.; lost tools at 4,300 ft.; drlg. by at 4,265 ft.

Reno County

Carey et al No. 1 McPheeters, NE NW sec. 22-26-8w. Drlg. 765 ft.
Sam Schneider et al No. 1 Kroecker, NE cor. sec. 12-22-5w. Drlg. 3,977 ft.
Westgate-Greenland et al No. 1 Popp, SW SW NE sec. 7-25-4w. S.D. 3,835 ft.

Rice County

Joe Aylward No. 1 Welhe, SW NE sec. 23-18-9w. Drlg. 185 ft.
Gillespie et al No. 1 Strong, NE NW sec. 9-18-8w. Abd.
John Hanna et al No. 1 Marshall, NE NW NW sec. 30-18s-8w. T.D. 1,530 ft.; abd.
Skiles et al No. 1 Campbell, SE SE NE sec. 28-19-9w. T.D. 2,957 ft.; S.D.
W. E. Witt et al No. 1 Fair, NW SE SE sec. 4-22-8w. Pay sd. 3,338 ft.; T.D. 3,345 ft.; swbg.

Rooks County

C. R. Craft et al No. 1 Ziegler, NE SW sec. 8-10-16w. Drlg. 3,566 ft.
Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. T.D. 3,326 ft. pmpd. 50 B.O. and 35 B.W. in 8 hrs.; fsg.
Producers Oil Co. No. 1 Ham, SW SW NW sec. 25-7-19w. S.D. 200 ft.
Producers Oil Co. No. 1 Tucker, SW SE NW sec. 23-10-17w. S.D. 3,305 ft.
Ross Oil Co. et al No. 1 Hancock, NE NW sec. 5-10-17w. Drlg. 2,500 ft.
Texo Trading Co. No. 1 Probst, SW SW NE sec. 18-6-19w. Drlg. 3,415 ft.

Rush County

Duwe & Brouk No. 1 Lebsack, SE SE NE sec. 13-16-16w. Sil. 3,492-95 ft.; 1,500 ft. sulfur water in hole in 2½ hrs.; T.D 3,512 ft.; S.D.O.
Wakefield & Brouk No. 1 Kerbs, NW NW SE sec. 11-17-16w. Drlg. 2,500 ft.

Russell County

Emrichs et al No. 1 Anderson, NE SE SW sec. 33-15-11w. Spd. and S.D.
Jones & Shelburne No. 1 Short, NE cor. sec. 12-15-12w. Drlg. 2,075 ft.
Murfin and Vernon O. & G. Co. No. 1 Pearson, NE cor. sec. 31-15-15w. Drlg. 3,245 ft.
Phil-Han & Hinkle No. 1 Reinhardt, SE SW sec. 19-14-14w. Drlg. 1,980 ft.
Winkler & Koch No. 1 Jones, SE SE NW sec. 22-14-13w. Sil. 3,180 ft.; S.D.O.

Sedgwick County

Frank Hudson et al No. 1 Fulton, NE SE sec. 35-28-1e. Fsg. 1,550 ft.
McKnab No. 1 Garrett, SE SW SW sec. 18-29-2e. S.D. 100 ft.
I. W. Murfin et al No. 1 Martin, SE NW sec. 32-28-1e. T.D. 3,491 ft.; acd.; swb. 45 B.O. in 24 hrs.
M. Steinbuchel et al No. 1 Shaffer, SW SW NW sec. 18-25-1e. C.O. 3,368 ft.
Union O. & R. Co. et al No. 1 Howell, SW cor. sec. 6-29-1e. T.D. 2,400 ft.; S.D.

Stafford County

Hipple et al No. 1 Moses, NW SW sec. 9-22-13w. Drlg. 3,335 ft.
Lindsay & Balliere et al No. 1 Tiepermann, SW SW NW sec. 31-22-12w. Drlg. 3,663 ft.
Tom Palmer No. 1 Fair, SE NE SW sec. 10-22-11w. T.D. 3,645 ft.; D.&A.
Fred Rust et al No. 1 Sims, NW SW sec. 8-23-11w. Drlg. 1,520 ft.
Stanolind O. & G. Co. No. 1 Wadsack, SW SW NE sec. 4-25-11w. Drlg. 3,660 ft.
Torry & Feaster et al No. 1 Landerman, SW SW NE sec. 23-22-12w. Drlg. 2,725 ft.

Sumner County

Cities Service Oil Co. No. 1 McCoy, SE SW sec. 11-35-2e. Drlg. 3,690 ft.
W. M. McKnab No. 1 Blair, SW cor. sec. 7-30-1e. T.D. 3,869 ft.; swbs. 75 to 100 B.O.P.D.
Saco Oil Co. No. 1 Phipps, SW SE NE sec. 24-30-1w. Spd. and S.D.
R. J. Wixson No. 1 Newton, SE SE sec. 21-30-2e. Drlg. 3,305 ft.

Trego County

Carlock No. 1 Kinzel, SW SW sec. 9-13-22w. Spd. and S.D.

NEBRASKA WILDCATS

L. R. Page et al No. 1 Bonham, C SE SE sec. 31-1n-1e, Jefferson County. Drlg. 3,130 ft.
Arab Pet. Corp. et al No. 1 Ogle, SE SE sec. 9-1n-14e. Viola 3,019 ft.; Granite sec. 9-1n-14e, Richardson County. Viola 3,019 ft.; Granite 3,423 ft., T.D.; P.B. to Viola.

OKLAHOMA

Week Ending December 11

NORTHERN OKLAHOMA

Beckham County

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. Drlg. 2,240 ft.

Caddo County

Indian Terr. Illum. Oil Co. No. 1 Dome-Bo, C NE SE sec. 29-6-10w. Drlg. 6,214 ft.

Cleveland County

Harper-Turner No. 1 Pollock, C W½ NW NW sec. 13-9-2w. T.D. 6,850 ft.; fsg.

Creek County

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 3,018 ft.; 2,000 ft. W.I.H. and S.S.O.; S.D.

Garfield County

H. R. Hollenback et al No. 1 Clark, NW cor. sec. 34-21-6w. Drlg. 5,976 ft.

Garvin County

B. C. D. Edwards No. 1 Clark, NE cor. sec. 16-3n-3e. T.D. 2,676 ft.; P.B. 2,088 ft.; ripped csg.; bailing.

Grady County

Doyle Pet. Co. No. 1 Huffine, NW NW SE sec. 30-5-8w. Drk.
Gulf Oil Corp. No. 1 Thomas, SW NW NW sec. 14-4-5w. Drlg. 9,301 ft.

Grant County

Magnolia Pet. Co. No. 1 Reynolds, NE NE SE sec. 19-25-5w. Drlg. 5,160 ft.

Greer County

J. I. Medlin et al No. 1 Broudle, NW cor. sec. 5-6n-20w. T.D. 90 ft.; (cor.); S.D.

Hughes County

Kenneth Ellison et al No. 1 Metropolitan, C NE NE sec. 14-7-9. Set 12¼-in. 66 ft.; R.U.R.
Phillips Pet. Co. No. 1 Becker, NE NW SW sec. 8-5-10. Drlg. 4,950 ft.
Pure Oil Co. No. 1 Rogers, SE SE NE sec. 18-8-12. Drlg. 5,035 ft.

Kay County

F. S. Freeland et al No. 1-A Watson, NE NW NW sec. 28-28-1w. Rig on ground.
Helmerich & Payne No. 1 Scott, SE SE NE sec. 20-28-1w. Rig.
E. W. Jones et al No. 1 Dorse, SE SW NW sec. 25-26-1w. Drlg. 4,068 ft.
E. J. Shaffer et al No. 1 McKee, NE NW sec. 20-28-1w. T.D. 2,500 ft.; S.D.

Kiowa County

Hughes & Reese No. 1 Fultz, SE cor. sec. 10-6-18w. Drlg. 1,168 ft.

Lincoln County

C. L. Carlock No. 1 Young, C N half NW NW sec. 23-15-5. Second Wilcox 4,509-12 ft.; P.B. 4,390 ft.; shot csg.; wtr.; S.D.O.

Logan County

Texas Co. No. 1 Roper, C W½ SW SE sec. 22-15-1e. 2nd Wilcox 5,530-42 ft.; S.D.O.

Major County

Ed V. Parsons et al No. 1 Patzkowsky, C NW sec. 10-20-11w. Rig.

Okmulgee County

Phillips Pet. Co. No. 1 Wood, NW SW SW sec. 31-11-13. Drlg. 2,150 ft.

Payne County

Mid-Continent Pet. Corp. No. 1 Ramsey, SW SW NW sec. 18-18-2e. Drlg. 1,650 ft.
Stanolind O. & G. Co. and Amerada Pet. Corp. No. 1 Bennett, NE SW NE sec. 31-19-4. 2nd Wilcox 4,151-56 ft.; mud and wtr. on D.S.T.

Pittsburg County

Okla. Dist. Oil Co. No. 1 Beeler, NE NE SW sec. 7-7-14. Drlg. 6,065 ft.
Phillips Pet. Co. No. 1 Gilcrease, NW NW SE sec. 16-7-12. T.D. 5,760 ft.; S.D.O.

Pontotoc County

H. W. Lee No. 1 Weatherly, NW SE NW sec. 24-1n-7. Rig.
Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. Spd.
H. Riddle et al No. 1 fee, NW SW SE sec. 11-3n-5e. Set 10¾-in. 40 ft.; R.U.R.
Union Dev. Co. No. 1 Abbott, SW NW NE sec. 34-3-6. T.D. 3,320 ft.; drill pipe stuck; S.D.

Seminole County

W. C. McBride, Inc., No. 1 Jackson, NE SW sec. 16-6-7. T.D. 1,813 ft.; D.&A.
W. B. Osborn et al No. 1 Harris, NW cor. sec. 11-6-5. T.D. 3,001 ft.; P.B. 2,968 ft.; shot; D.&A.
H. V. Woodson and Marydun Oil Co. No. 1 Gilliland, SE SW sec. 24-11-7. Drlg. 2,975 ft.

Texas County

Hagey et al No. 1 Becker, C NE sec. 4-1n-13ecm. T.D. 3,010 ft.; P.B. 2,900 ft.; 8,750,000 ft. gas; comp.
Hagey et al No. 1 Peck, C NE sec. 6-1n-13ecm. Set 5½-in. 2,840 ft.; drlg. plugs.

SOUTHERN OKLAHOMA

Atoka County

C. M. Sheldon and Gardner Pet. Co. No. 1 Lee, NE NW SW sec. 2-4s-10e. T.D. 1,789 ft.; rng. 8-in. csg.

Bryan County

Southern Oil Co. No. 1 Henry, NW NW NE sec. 10-8s-7. Drk.

Carter County

Lloyd Noble No. 1 Revelle, SW SE sec. 31-3s-2w. T.D. 4,028 ft.; S.D.O.

Choctaw County

V. K. Chapman and T. N. Low No. 1 Hallum, NE NW NW sec. 4-7s-20. T.D. 260 ft.; rng. 10-in.
J. A. True No. 1 Boby, C NW SW sec. 17-7s-19e. Drlg. 1,365 ft.

Coal County

Carter Oil Co. No. 1 Claytor, C W½ NE SW sec. 27-2n-9e. T.D. 6,715 ft.; rng. Halliburton tester.
Phillips Pet. Co. No. 1 Beck, SE SW SW sec. 6-1n-9e. T.D. 5,643 ft.; S.D.O.

Cotton County

Bowers & Wise No. 1 Pendergraft, NW SE SW sec. 4-4s-12w. Spd. 16 ft.; S.D.

Jefferson County

Massad & Swansberger No. 1 Barrett, NE SE SE sec. 14-6s-6w. T.D. 1,890 ft.; S.D.

Johnston County

Patton et al No. 1 McCrummins, C SW SW NE sec. 16-1s-6e. S.D. 1,380 ft.
W. T. Sheldon No. 1 Chapman, C NW NW sec. 26-4s-6e. T.D. 2,510 ft.; drlg. by lost bit.

Marshall County

Paul Robb et al No. 1 Vittitoe, C NE SE sec. 11-5s-4e. O.W.D.D.; C.O. to 720 ft.; S.D.

Murray County

Meyer & Greenup No. 1 Arbuckle, NW NW NE sec. 18-2s-3e. Spd. and S.D.
O. O. Owens No. 1 Fryer, NE SE NE sec. 34-1s-3e. Drlg. 2,685 ft.
Sinclair Prairie Oil Co. No. 1 Lancaster Trust, C SW NE sec. 10-1-2e. T.D. 4,404 ft.; freeing stuck pipe.

Pushmataha County

Erle Halliburton et al No. 1 Bagwell, SW NE NE sec. 30-3s-15e. T.D. 6,019 ft.; Temp. abd., but not plugged.

Stephens County

Coline Oil Co. No. 1 Johnson, C SW SE SE NE sec. 1-2n-8w. T.D. 10,000 ft.; P.B. 9,164 ft.; csg. collapsed at 8,689 ft.; S.D.O.
Chas. Newsom No. 1 Pfile, SW cor. sec. 1-2s-7w. T.D. 3,551 ft.; S.D.O.
Ed Parsons and Olson Drlg. Co. No. 1 Blake, C SW NW sec. 22-2n-8w. T.D. 6,002 ft.; P.B. 5,020 ft.; est. 50- to 75-bbl. pmpr.

Tillman County

Cavens et al No. 1 Southerland, SW SW NW sec. 35-4s-16w. T.D. 44 ft.; S.D.
Tom Walker No. 1 Bowman, SW SW NW sec. 10-4s-17w. S.D. 200 ft.

ARKANSAS

Clark County

Coker Oil Corp. No. 1 Coke, NW sec. 14-10-20. Drlg. 2,720 ft.

Columbia County

Kerr-Lynn Oil Co. No. 1 Barnett, sec. 14-17-20. T.D. 6,323 ft.; S.D.; W.O.O.

E. O. Olds No. 1 Dennis, NE SE SW sec. 4-17-21. S.D.; contr. depth 4,513 ft.; W.O.C.

Tide Water-Seaboard Oil Co. No. 1 Crumpler, SW NE SW sec. 24-17-19w. Fsg. D.S.; T.D. 7,563 ft.

Crittendon County

Manning & Martin No. 1 Cartwright, SW cor. sec. 16-7n-8e. Set 10¾-in. csg. 750 ft.; W.O.C.

Dallas County

L. S. Gist No. 1 J. H. Goodgame, NW sec. 26-10-16. S.D. 1,720 ft.

Miller County—Rodessa

American Liberty Oil Co. No. 1 Treadway, NE sec. 10-20-28. Drlg. 3,667 ft.

W. C. Feazel No. 1 Farmer, SE sec. 13-20-28. Drlg. 5,787 ft.

Rodger Lacy No. 2 Grogan, NE E½ W½ sec. 15-20-28. Drlg. 5,715 ft.

Rodger Lacy No. 1 Sartor, SE W½ sec. 15-20-28. Drlg. 5,770 ft.

R. H. Long No. 2 Greer, NW NE sec. 10-20-28. Drlg. 4,235 ft.

McClanahan et al No. 1-C Capps, E½ W½ Fract. sec. 14-20-28. 10-in. csg. 1,910 ft.

McClanahan et al No. 2-B Capps, SW sec. 11-20-28. Drlg. 5,810 ft.

McClanahan et al No. 1 Eason, S½ NW SW sec. 12-20-28. Rng. 7-in. csg. 6,104 ft.; T.D.; comp. 7 B.P.H., open tbg.

McMurray No. 1-A Thomas, NW E½ W½ sec. 13-20-28. Perf. csg. 6,024-90 ft.; comp. 40 B.P.D. and est. 6,000,000 ft. gas on 1/16-in. ck.; T.D. 6,150 ft.

McMurray No. 2-B Thomas, SW SW SE sec. 12-20-28. Perf. 6,091-94 ft.; T.D. 6,141 ft.; comp. 15 B.P.H., 23/64-in. ck.

R. W. Newell No. 1 Thomas, NW SE sec. 12-20-28. R.U.

Nivia Oil Corp. No. 1 Cross, SE cor. SE NE sec. 11-20-28. T.D. 6,106 ft.; set 7-in. csg. 6,104 ft.; perf. 6,040-95 ft.; acid.; tstg.

J. R. Ostrom No. 1 J. O. Gerrald, NW E½ sec. 15-20-28. C.O.; T.D. 6,079 ft.; S.D.

Parks et al No. 1 Gerrald, sec. 11-20-28. Set 7-in. csg. 6,169 ft.; perf. 6,160-73 ft.; acd.; comp. 90 B.P.D., open tbg.; T.D. 6,189 ft.

Potter Drlg. Co. No. 2 Larney, sec. 11-20-28. T.D. 6,135 ft.; set 7-in. csg. 6,131 ft.; perf. 6,063-66 ft., 6,092-96 ft. and 6,104-35 ft.; to acd.

Roberts Bros. Drlg. Co. No. 1-B Capps, C sec. 10-20-28. R.U.

S. O. Thomason No. 1 Greer, SW SW NW sec. 11-20-28. O.T.D. 5,809 ft.; sdtrkd. 3,500 ft.; T.D. 4,400 ft.; D.S. stuck 2,-666 ft.

Thompson & Joffra No. 1 Treadway, SE NE sec. 10-20-28. Drlg. 100 ft.

Nevada County

Benedum & Trees Oil Co. No. 2 Mary Jackson, NE cor. sec. 9-14s-20w. Set 13⅜-in. csg. 103 ft.; T.D. 761 ft.

Bruce E. Wallace No. 2 Haynie, SE cor. sec. 5-14-21. R.U.; W.O. fuel.

Union Products & Pet. Co. No. 4 Haynie, NW sec. 6-14-20. 6-in. csg. 1,192 ft.; sd.; S.O. 1,170-78 ft.; W.O. perf.

Ouachita County

O. F. Whittacker No. 2 Guttry, NW sec. 21-15-19w. S.D. 2,120 ft.

Pulaski County

A. L. Kitselman, No. 2 A. L. Kitselman, Jr., SE SE SW sec. 2-1s-13e. Drlg. 1,-721 ft.

Union County—Schuler

E. M. Jones No. 2 Marine Oil Co., SW NW SE sec. 17-18-17. Set 7-in. 7,679 ft.; perf. 7,585-7,607 ft.; T.D. 7,950 ft.

E. M. Jones No. 3 Marine Oil Co., NE NW SE sec. 17-18-17. Drlg.

E. M. Jones No. 4 Marine Oil Co., SE SW SE sec. 17-18-17. T.D. 7,029 ft.; P.B. whipstock 6,845 ft.; drlg. sdtrk. hole 7,-028 ft.

Lion Oil Ref. Co. No. 1-A M. D. Justiss: NE NW NE sec. 19-18-17. Drlg. 2,130 ft.

Lion Oil Ref. Co. No. 1 Marine Oil Co NE SE SW sec. 17-18-17. T.D. 7,535 ft.; D.S. stuck.

Lion Oil Ref. Co. No. 3-B Edna Morgan. NE NW SE sec. 18-18-17. Drlg. 7,002 ft.

Lion Oil Ref. Co. No. 4-B Edna Morgan. NW SW SE sec. 18-18-17. Drlg. 5,331 ft.

Lion Oil Ref. Co. No. 1-C D. and J. C. Morgan, NE SE SE sec. 18-18-17. Drlg. 5,904 ft.

Marine Oil Co. No. 3 fee, SW sec. 17-18-17. Drlg. 3,260 ft.

Marine Oil Co. No. 2 M. D. Justiss, sec. 18-18-17. Drlg. 7,273 ft.

Phillips Pet. Co. No. 1 First Natl. Bk., NE SW sec. 17-18-17. R.U.

Phillips Pet. Co. No. 1 E. Gan, SW SE NE sec. 18-18-17. Run 7-in. csg.; T.D. 7,700 ft.; comp.; 3,768 B.P.D.

Phillips Pet. Co. No. 1 Jennings, NW SW NE sec. 18-18-17. Drlg. 6,464 ft.

Phillips Pet. Co. No. 2 Justiss, NW sec. 18-18-17. Drlg. 4,292 ft.

Phillips Pet. Co. No. 2 Marks, SW sec. 18-18-17. Drlg. 3,406 ft.

Alice Sidney Oil Co. No. 2 Morgan, SE T.D. 7,700 ft.; perf. 7,552-68½ ft.; comp. 1,886 B.P.D., 70/64-in. ck.

Alice Sydney Oil Co. No. 3 Morgan, NW NE SE sec. 18-18-17. Drlg. 4,505 ft.

Union County—Other

Ark. So. Oil Co. No. 1 Simmons, SE NW sec. 15-18-18. Comp. 50 B.P.D.; T.D. 2,-283 ft.

Penn-Ark. Pet. Corp. No. 1 Raulston, sec. 12-17-14. Swbg. to test.

R. G. Trippett and D. C. R. O. Co. No. 5 School Bd., sec. 16-19-14. Set 7-in. csg. 2,432 ft.; T.D. 2,460 ft.; tstg.

Claiborne Parish

Atlantic Ref. Co. No. 1-B Bean, N½ NW NE sec. 32-21-4. Drlg. 2,967 ft.

Crescent Drlg. Co. No. 1 Fowler, E½ SW flwd. 50 bbls. 1st hr., 27 bbls. 2nd hr., 900 bbls. in one week and went dead; comp. 100 B.P.D. on ½-in. ck.; T.D. 5,-285 ft.

E. W. Gill No. 2 English, NW SE sec. 29-21-4. R.U.

T. L. James & Co. No. 1 Tanner, NE NE sec. 32-21-4. Fsg. bit and drl. collar 1,135 ft.

T. L. James & Co. No. 2 Tanner, C E½ NE NE sec. 32-21-4. Drlg. sh. 915 ft.

W. L. McClanahan No. 1 J. T. Lewis, W½ SW SE sec. 25-20-7. Cg. 4,933 ft.

A. O. Olsen No. 1 English, E½ SE SE sec. 29-21-4. Set 7-in. 5,183 ft.; T.D. 5,-204 ft.; comp. 15 B.P.H., open tbg.; T.D. 5,204 ft.

A. O. Olson No. 6-A Patton Est., sec. 3-21-4. Drlg. 4,008 ft.

C. R. Schuster No. 1 S. Lloyd, SW SW sec. 2-20-5. Drlg. 4,812 ft.

Scouts Oil Corp. No. 2 English, sec. 30-21-4. Acid.; tstg. 5,162 ft.

Sloan & Zook No. 1 M. S. Patton, sec. 1-20-5. Perf. 5,347-66 ft.; comp. 1,920 B.P.D., open tbg.; T.D. 5,404 ft.

Sloan & Zook No. 5 Patton, SW sec. 1-20-5. Set 10¾-in. csg. 870 ft.

Trippett et al No. 1-B Aycock, C N½ SE SE sec. 1-20-5. Drlg. 3,814 ft.

Union Prod. Co. No. 2 Brownfield, sec. 5-19-5. O.W.D.D.; drlg. sd. 8,035 ft.

Union Prod. Co. No. 1 Stevenson Kilpatrick. O.W.D.D.; T.D. 5,741 ft.; prep. ream.

G. H. Vaughn No. 2 Eppinger, N¼ SW SW sec. 29-21-4. Sat. L. 5,104-22 ft.; set 5½-in. csg. 5,104 ft.; comp. 60 B.P.H., ½-in. ck.; T.D. 5,137 ft.

Vaughn No. 2 King, N½ SE SE sec. 30-21-4. Set 10¾-in. csg. 812 ft.; W.O.C.

Concordia Parish

Coastal Mineral & Dev. Co. No. 1 Winsten, NW cor. sec. 23-7-9e. Tstd. S.W. 2,090 ft.; P.B. 2,027 ft.; tstg.

De Soto Parish

Clear Lake Oil Co. No. 1 J. A. Woolums, NW sec. 29-12-12. Wtg. on csg.; T.D. 2,690 ft.

Jal Drlg. Co. No. 10-A Scales, sec. 36-13-12. Drlg. 210 ft.

Kingston Oil Co. No. 1 Scott, SE NE sec. 32-14-13. S.D. 2,777 ft.

Petroleum Heat & Power Co. No. 1 Kavanaugh, NW SW sec. 7-11-11. Cg. 2,670 ft.

T. & J. Inc. No. 2 Tullos, SE NE sec. 26-10-1e. Set 6-in. csg. 1,514 ft.; T.D. 1,523 ft.; tstg.

Franklin Parish

Jenson & Bailey No. 1 Grayson, C NE sec. 36-12-6e. O.T.D. 2,516 ft.; tstd. S.W. 1,703 ft.

La Salle Parish

T. & J., Inc. No. 2 Tullos, SE NE sec. 26-10-1e. Tstg. 1,523 ft.

T. & J., Inc. No. 4 Tullos, SE cor. SE sec. 26-10-1e. R.U.

Lincoln Parish

Gulf Oil Corp. No. 2 Patton, SW cor. NW SE sec. 6-20-4. Drlg. sh. 2,311 ft.

Love Bros. No. 1 Patton, SW SE sec. 6-20-4. R.U.

Magnolia Pet. Co. No. 2-B Corbin, NW NW sec. 5-20-4. R.U.

E. T. Oakes No. 1 Griggs, sec. 36-18-1w. Cg. 5,326 ft.

Red River Parish

Arkansas Fuel Co. No. 1 Frankland Realty Co., NW sec. 20-11-9. Drlg. 4,151 ft.

Glassell & Whitehurst No. 1 LeLong, NE NW NE sec. 25-12-11. Set 13⅜-in. csg. 250 ft.

Yandell Rogers No. 5 Gaspair, SE SW sec. 27-13-11. Drlg. sh. 663 ft.

Sabine Parish

Fox & Phillips No. 1 Cook Ld. Co., SW SE NW sec. 1-9n-12w. S.D. 3,450 ft.

Hunter Co. No. 1 Long Bell Lbr. Co., sec. 23-7-13. T.D. 3,016 ft.; P.B. 2,565 ft.; to acidize.

W. L. Posey No. 1 Burkett, sec. 10-9-13. D.&A. 2,201 ft.

Remine et al No. 1 4-L Co., SW SW sec 7-5-12. S.D. 3,218 ft.

Sutton Oil Co. No. 1 Sabine Lbr. Co., SE cor. NW NE sec. 23-7n-14w. R.U.

Tensas Parish

H. M. Jones No. 2 Chicago Mill & Ld. Co., NE SW sec. 31-12-10e. R.U. and S.D.

Union Parish

Joe Modisett No. 1 Frost Lbr., sec. 14-21-1e. Drlg. sh. 6,360 ft.

Webster Parish

V. L. Foster No. 2 J. M. Mixon, SE sec. 21-21-10. Drlg. 8,010 ft.

Magnolia Pet. Co. No. 1 Crichton Hrs., NE NW sec. 33-21-10. Drlg. 7,400 ft.

Magnolia Pet. Co. No. 7 Marshall, SW SE sec. 21-21-10. Drlg. 6,622 ft.

Magnolia Pet. Co. No. 2 Mixon, sec. 22-21-10. Drlg. 2,964 ft.

Magnolia Pet. Co. No. 1 Sexton Unit, NW SE sec. 32-23-9. R.U.

North American Oil Co. No. 1 Coyle, NE SW sec. 28-21-10. Drlg. 5,212 ft.

Ohio Oil Co. No. 2 Bodcaw Acct. 4, SW SE NW sec. 24-21-10. Drlg. 5,853 ft.

Ohio Oil Co. No. 48 Bodcaw Acct. 2, SE sec. 15-21-10. Drlg. 5,948 ft.

Ohio Oil Co. No. 23 Gray Acct. No. 1, SE sec. 27-21-10. Drlg. 4,808 ft.

Ohio Oil Co. No. 2 Warren Cox, SE sec. 23-21-10. Drlg. 6,616 ft.

A. G. Oliphant No. 1 Hodges, NW sec. 34-21-10. R.U.

W. G. Ray No. 1 Stewart, NE cor. sec. 33-21-10. Drlg. sh. 2,924 ft.

Stanolind O. & G. Co. No. 1 Purdee Co., SW NE sec. 36-21-10. R.U.

United Gas No. 6 Tillman, NE sec. 28-21-10. Drlg. 8,067 ft.

Woodley Pet. Co. No. 5-B M. E. Gray, sec. 27-21-10. Drlg. 7,082 ft.

SOUTH LOUISIANA FIELDS

Bay St. Elaine—Terrebonne Parish

F. J. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. S.D. 910 ft.

Texas Co. No. 15 State, sec. 20-22s-18e. Drlg. sdy. sh. 5,063 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 1 Schwing, sec. 67-9s-11e. Drlg. sh. 1,500 ft.

Bayou Cocotrix—Terrebonne Parish

Shell Pet. Corp. No. 4 Pelican, sec. 19-17s-15e. Driving piling.

Bayou De Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 St. Charles Ld. Co., sec. 38-15s-20e. 10¾-in. csg. 2,698 ft.; drlg. sdy. sh. 8,718 ft.

Black Bayou—Calcasieu Parish

Shell Pet. Corp. No. 39 Watkins. Drlg. sdy. sh. 4,619 ft.

Bosco—Acadia Parish

Superior Oil Co.-Pure Oil Co. No. 5 Larcade, sec. 35-8s-3e. T.D. 10,216 ft.; P.B.; sdtrkd.; drlg. sdy. sh. 8,910 ft.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 20 School Ld., sec. 16-14s-13w. R.U.

Magnolia Pet. Co. No. 21 Cameron Meadows, sec. 21-14s-13w. 13⅜-in. csg. 1,-173 ft.; drlg. sdy. sh. 4,120 ft.

Chenoyville—Rapides Parish

Amerada Pet. Corp. No. 4 Well, sec. 53-1s-2e. R.U.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 1 Dolph, sec. 36-13s-9e. T.D. 7,185 ft.; 7-in. csg. 6,904 ft.; drlg. sdy. sh. 7,746 ft.; no report.

Pan American Prod. Co. No. 1 Eucer, sec. 11-13s-9e. Drlg. sh. 7,612 ft.

Choctaw—Iberville Parish

Louisiana Crusader Oil Co. No. 1 E. B. Schwing, sec. 29-8s-11e. Drlg. sd. and L. 6,809 ft.

Standard Oil Co. No. 8 Gay, sec. 52-9s-11e. Drlg. sh. 3,767 ft.

Darrow—Ascension Parish

Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. R.U.

Humble No. 12 Gumbel, sec. 33-10s-2e. 16-in. csg. 225 ft.; T.D. 6,914 ft.; I.P. 672 B.P.D., ¼-in. ck.

Humble O. & R. Co. No. 1 Rose, sec. 33-10s-2e. R.U.

Dog Lake—Terrebonne Parish

Texas Co. No. 18 State, sec. 5-22s-16e. T.D. 7,606 ft.; P.B. 6,113 ft. to sdtrk.; drlg. sh. 6,836 ft.

Texas Co. No. 21 State, sec. 5-22s-16e. Drk.

Four Isle—Terrebonne Parish

Texas Co. No. 9 L.L.&E., sec. 24-21s-16e. T.D. 8,553 ft.; P.B. 3,881 ft.; sdtrk.; T.D. 6,943 ft.; fsg.

Garden Island—Plaquemines Parish

Texas Co. No. 25 State, sec. 37-23s-33e. Drlg. sh. 1,247 ft.

Gillis—Calcasieu Parish

Union Sulphur Co. No. 7 Kaufman, sec.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo—Rodessa

Blackwell O. & G. Co. No. 3 Neugent, sec. 8-23-16. O.W.D.D.; comp. 66 B.P.D.; P.B. 6,025 ft.; perf. 5,885-5,980 ft.; O.T.D. 6,750 ft.

F. W. Burford No. 1 Cleveland, NW S½ sec. 2-23-16. Set 9⅝-in. 2,121 ft.

F. W. Burford No. 2 Cleveland, C sec. 2-23-16. 7-in. 5,924 ft.; T.D. 5,980 ft.

F. W. Burford No. 2 Terry, NE sec. 2-23-16. Drlg. 5,760 ft.

F. W. Burford No. 4 Terry, SE NE sec. 2-23-16. Set 7-in. at 6,005 ft.; perf. 6,005-20 ft.; comp. 5,000,000 ft. gas and 50 B.P.D. dist., 21/64-in. ck.; T.D. 6,049 ft.

F. W. Burford No. 1 U. S. Govt., NE SE SW sec. 6-23-16. T.D. 6,115 ft.; acd. and tstd. dry; P.B. 6,063 ft.; comp. 1,100,000 ft. gas and 4 B.P.D. dist., 1-in. ck.; T.D. 6,063 ft.

Driscoll Jt. No. 1 Muslow, SE NW NE sec. 4-20-15. 6⅝-in. csg.; T.D. 2,175 ft.

Gulf Ref. Co. No. 1 Allison, NW sec. 3-23-16. Drlg. 5,839 ft.

Gulf Ref. Co. No. 6 Curtis, SE sec. 19-20-15. Set 6-in. csg. 2,167 ft.; T.D. 2,170 ft.

Magnolia Pet. Co. No. 2 G. W. Hardy, NW SW sec. 1-23-16. O.T.D. 6,068 ft.; P.B. 6,010 ft.; 7-in. csg. 5,990 ft.; tstd. est. 5,000,000 ft. gas; T.D. 6,012 ft.; shut in; W.O. gauge.

Shell Pet. Corp. No. 1-A Govt., NE SW SE sec. 9-23-16. T.D. 5,953 ft.; rng. S.T.

Standard Oil of La. No. 4 McCoy, NE SE NW sec. 10-23-16. Cg. 5,959 ft.

Standard Oil Co. of La. No. 1 Terry, SE SW sec. 2-23-16. Drlg. 2,450 ft.

Alice Sydney Oil Co. No. 1 Alexander, NW cor. sec. 3-23-16. Drlg. 1,350 ft.

R. G. Trippett No. 1 Parker, NE cor. SE sec. 2-23-16. Drlg. 2,980 ft.

R. G. Trippett No. 1 Sharpe, NE cor. sec. 4-23-16. Cg. 6,036 ft.

Union Prod. Co. No. 5 Harris, sec. 10-23-16. Drlg. 820 ft.

Union Prod. Co. No. 6 Starke, SW cor. sec. 8-23-16. T.D. 5,980 ft.; set 7-in. csg. 5,946 ft.; sat. sd. 5,980-91 ft.; tstg.; T.D. 6,020 ft.; comp. 7 B.P.H. on ¼-in. ck.; T.D. 6,020 ft.

Union Prod. Co. No. 7 Starke, SW sec. 8-23-16. Drlg. 3,138 ft.

G. H. Vaughn No. 1 Sartor, NE sec. 3-23-16. Drlg. 5,000 ft.

N. LOUISIANA WILDCATS

Bienville Parish

Gulf Ref. Co. No. 1 Goodpine, sec. 25-14-8. T.D. 6,080 ft.; rmg. to bttm.

H. L. Hunt and Seaboard No. 1 Federal Ld. Bk., SW sec. 10-16-16. Drlg. 7,689 ft.

Bossier Parish

Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. S.D. 810 ft.

Triangle Drlg. Co. No. 1-A Herold, NE NW sec. 13-17-12. 10-in. csg. at 265 ft.

Union Prod. Co. No. 1-B Kerr Unit, SE sec. 24-17-12. Drlg. 2,975 ft.

Caddo Parish

W. D. Chew No. 3 Spell, NE SW SE sec. 29-21-15. Comp. 40 B.P.D., pump; T.D. 1,575 ft.

W. D. Chew No. 4 Spell, SE sec. 29-21-15. Drlg. 50 ft.

W. P. Clark No. 1 Dyer, C sec. 10-20-16. Tstd. dry; W.O.; T.D. 2,279 ft.

Mrs. O. P. Clement No. 1-B Caddo Lvy. Bd., NE sec. 5-20-16. 6-in. at 2,180 ft.; T.D. 2,185 ft.

D. C. R. Oil Co. No. 2 Sibley, SE cor. SE NW sec. 15-19-14. Cg. 2,400 ft.

Double "I" Oil Co. No. 1 Goodwin, NW cor. sec. 33-21-15. R.U.

W. Dromgoole No. 1 School Bd., SE NW sec. 16-19-14. 7-in. 2,425 ft.; W.O.S.R. 2,460 ft.

W. D. Flynn No. 3 Natalie, SW cor. sec. 10-21-16. R.U.

W. H. Harrison No. 2 Shoreline Crystal, SE NW NE sec. 23-21-16. 4½-in. 1,034 ft.; T.D. 1,041 ft.; W.O.S.R.

R. E. Kennedy No. 1 Wells, SE SW sec. 10-21-15. Set 6-in. csg. 1,565 ft.; W.O.C.

La. Oil Prod. Co. No. 3-C Muslow, sec. 9-20-15. Set 7-in. csg. 2,136 ft.; T.D. 2,172 ft.

O. O. Olsen No. 1 R. T. Sharp, W½ NW sec. 15-18-16. Tstd. S.G.; prep. acid.; T.D. 5,624 ft.

Prairie River Synd. No. 1 Hutchinson, SW NW sec. 15-15-12. S.D. 9,141 ft.

A. D. Robinson No. 1 Wilkinson, sec. 22-20-14. Drlg. 2,020 ft.

J. E. Sedberry No. 1 Dickinson, NW sec. 15-19-14. Drlg. 585 ft.

J. J. Shulman No. 1 Hobbs, NW sec. 28-21-15. Acid.; tstg.; T.D. 1,630 ft.

R. G. Trippett and D. C. R. Oil Co. No. 4 Sch. Bd., sec. 16-19-14. Comp. 35 B.P.D.; T.D. 2,458 ft.

McGREGOR

85,000 Working Barrels in Use

OUR working barrels have been continually improved for 30 years. We have worked with producers in developing many special features for pumping.

We will be glad to try to help you out of your difficulties.

McGREGOR WORKING BARREL COMPANY

Bradford, Pa., U.S.A.

13-9s-8w. T.D. 7,079 ft.; 5-in. csg. 7,052 ft.; swbd. S.W.; P.B. to 6,898 ft.; swbd. S.W.; fsg. for screen; P.B. 7,057 ft.; sdtrkd.; T.D. 7,057 ft.; tstd.; gas; shut in; W.O.

Union Sulphur Co. No. 2 Mary McIvor, sec. 14-9s-8w. T.D. 7,165 ft.; 5-in. csg. 7,165 ft.; flwd. S.W.; make squeeze job; W.O.C.

Union Sulphur Co. No. 6 Kaufman, sec. 13-9s-8w. Drlg. 2,830 ft.

Hackberry—Cameron Parish

W. T. Burton No. 3 Lewis, sec. 22-12s-10w. R.U.

W. T. Burton No. 2 Porter Ellender, sec. 27-12s-10w. Drlg. sh. 3,812 ft.

F. J. LeBlanc No. 1 Doiron, sec. 36-12s-10w. R.U.R.

M. P. O'Meara No. 1 Rigmaden heirs, sec. 22-12s-10w. Drk.

Stanolind O. & G. Co. No. 8 Duhon, sec. 22-12s-10. T.D. 4,756 ft.; 7-in. csg. 4,684 ft.; perf. csg. 3,160-63 ft.; set retainer; squeezed; flwd. 137 B.P.D.; tstg.

Stanolind O. & G. Co. No. 8 Carter & Sweeney, sec. 22-12s-10w. R.U.

Stanolind O. & G. Co. No. 10 Carter & Sweeney, sec. 22-12s-10w. Drk.

Stanolind O. & G. Co. No. 26 Gulf Ld., sec. 22-12s-10w. 10¾-in. csg. 1,644 ft.; T.D. 4,513 ft.; P.B. 3,175 ft.; sdtrkd.; T.D. 3,615 ft.; P.B. 1,800 ft.; 7-in. csg. 3,086 ft.; comp.; no gauge.

Stanolind O. & G. Co. No. 27 Gulf Ld., sec. 22-12s-10w. T.D. 4,075 ft.

Texas Co. No. 3-B State, sec. 12-12s-9w. T.D. 7,695 ft.; P.B.; sdtrkd.; dry; sh. 6,718 ft.

Union Sulphur Co. No. 1 Doiron, sec. 37-12s-10w. Drlg. sh. 4,315 ft.

Iowa—Jeff Davis Parish

Magnolia No. 13 Wait, sec. 12-9s-7w. Drlg. sdy. sh. 3,012 ft.

Lockport-Cameron Parish

Magnolia Pet. Co. No. 35 Miller, sec. 9-10s-9w. Drlg. sdy. sh. 7,512 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Teche Sugar Co., sec. 58-13s-8e. Drlg. sh. and L. 6,287 ft.; no report.

Jennings—Acadia Parish

W. T. Burton No. 5 Roboria, sec. 42-9s-2w. Drlg. 1,057 ft.

H. Fostiades et al No. 1 Washington-Opelousas, sec. 41-9s-2w. Drlg. sh. 2,629 ft.

Glassell & Glassell No. 4 Trushell, sec. 42-9s-3w. Oil sd. 6,885-6,955 ft.; tstg.

Gulf Ref. Co. No. 39 Arnaudit, sec. 47-9s-2w. Drlg. sh. 4,910 ft.

Jolly Pet. Co. No. 2 McFarlain, sec. 41-9s-2w. Drk.

Ladak Oil Co. No. 3 Clement, sec. 46-9s-2w. T.D. 1,997 ft.; 6⅝-in. csg. 1,790 ft.; tstg.

M. P. O'Meara No. 1 Moresi, sec. 41-9s-2w. Drlg. sh. 5,812 ft.

Jolly Pet. Co. No. 5 Jennings-Haywood, sec. 46-9s-2w. Spd.

Reiter Foster Oil Co. No. 2 Crusel, sec. 42-9s-2w. T.D. 3,908 ft.; P.B. 3,746 ft.; failed to flow; pull screen.

Shell Pet. Corp. No. 3 Community, sec. 40-9s-2w. Drlg. sh. 6,988 ft.

Stanolind O. & G. Co. No. 19 Houssiere-Latrelle, sec. 47-9s-2w. Drlg. sh. 5,311 ft.

Superior Oil Co. No. 1 Julis Clement, sec. 46-9s-2w. Drlg. sh. 5,609 ft.

Superior Oil Co. No. 5 Jennings-Heywood, sec. 41-9s-2w. Drlg. sh. 2,937 ft.

Superior Oil Co. No. 7 Leckelt, sec. 42-9s-2w. Cg. 6,812 ft.

Superior Oil Co. No. 9 Leckelt, sec. 42-9s-2w. Drlg. sh. 2,630 ft.

Victor Weisse No. 1 Clement, sec. 46-9s-2w. Drlg. sh. 2,347 ft.; no report.

Lafitte—Jefferson Parish

Texas Co. No. 7 L.L.E., sec. 20-17s-24w. T.D. 10,275 ft.; 9⅝-in. csg. 10,275 ft.; perf. 10,065-92 ft.; I.P. 1,286 B.P.D., ⅝-in. ck.

Texas Co. No. 8 Rigolet, sec. 29-17s-24e. 13⅜-in. csg. 1,023 ft.; drlg. sdy. sh. 9,930 ft.

Texas Co. No. 8 Lafitte, sec. 20-17s-24e. Drlg. sd. and sh. 628 ft.

Texas Co. No. 1 Marrero Land & Investment Co., sec. 20-17s-24e. Bldg. drk.

LEGAL

Department of the Interior, United States Land Office, Las Cruces, New Mexico. Notice is hereby given that Lots 3 and 4, NE¼ SW¼ Sec. 31, T. 25 S., R. 37 E., N. M. P. M., New Mexico, containing 119.86 acres in the Jal Field, New Mexico, are offered to the responsible qualified bidder of the highest bonus per acre for lease under section 17 of the act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674) at the royalty rate scale in the lease form shown in Circular 1386 at a sale to be held in the United States Land Office, Las Cruces, New Mexico, at ten o'clock, December 21, 1937. The successful bidder must deposit on the date of the sale a certified check on a solvent bank, or cash, for 1/5 of the amount bid, and file the showing of qualifications to receive a lease, required by section 7 of Circular 1386. The remainder of the bonus bid and the annual rental of $1 per acre must be paid prior to the issuance of the lease. The bidders are warned against violation of the provision of Sec. 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

Lake Hermitage—Plaquemines Parish

Gulf Ref. Co. No. 7 Lafourche, sec. 12-18s-25e. 7-in. csg. 8,074 ft.; cg. sdy. sh. 9,172 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 13 State, sec. 8-23s-18e. T.D. 6,605 ft.; D.S. stuck; fsg.

Lockport—Calcasieu Parish

Magnolia Pet. Co. No. 35 Miller, sec. 9-10s-9w. Drlg. sdy. sh. 7,520 ft.

Lake Long—Lafourche Parish

Fohs Oil Co. No. 2 State, sec. 65-17s-19e. R.U.

Fohs Oil Co. No. 3 State, sec. 65-17s-19e. 10¾-in. csg. 2,743 ft.; T.D. 9,539 ft.; sd. 9,517-33 ft.; P.B. 9,464 ft.; perf. csg. 9,482-96 ft.; drlg. sh. 9,768 ft.

Leesville—Plaquemines Parish

Texas Co. No. 63 Leesville, sec. 27-12s-22e. Drk.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Frank Wurzlow, sec. 6-19s-19e. 13⅜-in. csg. 2,796 ft.; drlg. sd. 8,450 ft.

New Iberia—Iberia Parish

Wm. Hellis No. 4 Gulf Land, sec. 52-12s-7e. Drlg. sh. 88 ft.; no report.

Wm. Hellis No. 9 Bernard, sec. 54-12s-7e. T.D. salt 5,171 ft.; P.B. and sdtrkd.; sd.&sh. 4,538 ft.; T.D. 4,661 ft.; salt P.B.; sdtrk.; drlg. S.W. sd. 5,149 ft.; no report.

Wm. Hellis No. 10 Bernard, sec. 54-12s-7e. R.U.

Texas Co. No. 3 Bryant, sec. 25-12s-7e. Drlg. sh. 3,628 ft.; no report.

Texas Co. No. 1 Burke, sec. 56-12s-8e. Drlg. sh. 6,284 ft.; no report.

Texas Co. No. 2-B Hanzen, sec. 54-12s-7e Drlg. sh. 746 ft.; no report.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 1 H. J. Habetz, sec. 45-8s-1e. Drlg. sh. 1,040 ft.

Humble O. & R. Co. No. 1 Habetz, sec. 3-9s-1e. Drlg. sh. 9,039 ft.

Humble O. & R. Co. No. 1 L. Laumbrecht, sec. 4-9s-1e. Drlg. sh. 9,153 ft.

Roanoke—Jeff Davis Parish

Superior Oil Co. No. 1 Ferguson, sec. 13-9s-4w. Drlg. sh. 7,855 ft.

Sorrento—Ascension Parish

Sorrento Oil Co. No. 1 L. L. Barnard et al, sec. 16-10s-4e. Spd.

South Elton—Jeff Davis Parish

Stanolind O. & G. Co.-Amerada Pet. Corp. No. 3-B Calcasieu Natl. Bank, sec. 27-7s-3w. Drlg. sh. 2,001 ft.

South Jennings—Jeff Davis Parish

Loffland Bros. No. 1 Fontenot, sec. 16-10s-3w. T.D. 9,003 ft.; 7-in. csg. 8,943 ft.; P.B. 8,904 ft.; perf. csg. 8,870-78 ft.; swbd. S.W.; perf. csg. 8,880-90 ft.; tstg.

Starks—Calcasieu Parish

Capital Oil Co. No. 1 Lutcher-Moore, sec. 24-9s-13w. R.U.

Lutcher Moore No. 3 fee, sec. 19-8s-12w T.D. 4,361 ft.; 6⅝-in. csg. 4,351 ft.; flwd. P.L.O.; started making gas; pull screen to deepen.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 853 fee, sec. 20-9s-10. T.D. 1,039 ft.; run 10¾-in. csg.; drlg. sh. 4,518 ft.

Union Sulphur Co. No. 852 fee, sec. 29-9s-10w. Drlg. sd. 3,689 ft.; T.D. 4,269 ft.; P.B. 3,750 ft.; sdtrkd.; drlg. sh. 4,415 ft.

Union Sulphur Co. No. 851 fee, sec. 2-9s-10w. Drlg. rock 5,119 ft.; no report.

Topotate-Acadia Parish

Continental Oil Co. No. 4-D Homeseekers Dev. Co., sec. 34. Spd.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 13 Harang sec. 8-17s-20e. 16-in. 210 ft.; drlg. sdy. sh. 7,007 ft.

Pan American Prod. Co. No. 14 Harang, sec. 9-17s-20e. 10¾-in. csg. 1,838 ft.; drlg. sd. 5,451 ft.

Venice—Plaquemines Parish

Tide Water Oil Co. No. 4 Manhattan Fruit Co., sec. 26-21s-30e. Cored oil sd. 7,632 ft.; 7-in. csg. 7,733 ft.; T.D. 7,733 ft.; perf csg.; I.P. 25 B.P.H. through 5/32-in. ck.

Tide Water Oil Co. No. 5 Manhattan Fruit Co., sec. 26-26s-30e. R.U.

Vinton—Calcasieu Parish

Katina Oil Co. No. 2 Vincent, sec. 34-10-12w. T.D. 4,303 ft.; P.B. 3,227 ft.; swbd. oil and S.W.

Superior Oil Co. No. 2 Levy, sec. 4-11s-12w. Drlg. sh. 1,912 ft.

Sutton-Burton No. 1 Calcasieu Natl. Bk., sec. 3-11s-12w. R.U.R.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 1 La. Ld. Improvement Co., sec. 46-3s-2e. R.U.

White Castle—Iberville Parish

T. D. Humphray No. 1 E. B. Adams, sec. 1-11s-12e. S.D. 6,067 ft.; P.B. and sdrkd.; drlg. sd. and sh. 8,745 ft.

Shell Pet. Corp. No. 11 Wilbert. Drlg. sh. 4,675 ft.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. T.D. 5,106 ft.; P.B. to approx. 500 ft.; S.D. 3,850 ft.

Gulf Oil Corp. No. 1 Euclia Broussard, sec. 49-10s-2w. Drlg. sh. 9,033 ft.

Humble O. & R. Co. No. 1 R. A. Sarver, sec. 35-10s-1e. T.D. 9,526 ft.; rmg 9⅝-in. csg. 7,550 ft.; drlg. sh. 10,226 ft.

Calcasieu Parish

D. & D. Oil Co. No. 2 Lutcher-Moore, sec 1-8s-13w. T.D. 8,340 ft.; run 9⅝-in. csg.; drlg. plug; csg colpsd; T.D. 8,579 ft.; 1,747 ft. of 7-in. csg. cmtd. 8,579 ft. T.D. 9,674 ft.; P.B. 8,579 ft.; perf. csg. 8,550-60 ft.; tstd. gas cut mud with S.W.; P.B. 8,400 ft.; W.O.C.

Republic Prod. Co. No. 1 Sabine Tram. Co., sec. 25-18s-14w. 10¾-in. csg. 1,981 ft.; T.D. 9,600 ft.; fsg.

Union Sulphur Co. No. 1 American Oil & Sulphur Co., sec. 16-10s-10w. Drlg. sh. &sh. 6,148 ft.

Wheeler Oil Corp. No. 2 Sch. Ld., sec. 16-9s-7w. R.U.

Cameron Parish

Humble O. & R. Co. No. 1 Miami Corp., sec. 8-14s-5w. 20-in. pipe set 188 ft.; 9⅝-in. csg. 7,100 ft.; T.D. 9,700 ft.; hole bridged.

Cameron Parish—Gulf of Mexico

Superior Oil Prod. Co. et al No. 1 State-Gulf of Mexico, 3,800 ft. W, 6,200 ft. S of SE cor. of irregular sec. 4-15s-8w. 10¾-in. csg. 1,157 ft.; T.D. 7,166 ft.; run 7⅝-in. csg.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Elliott, sec. 3-9s-2e. Cg. 7,678 ft.

Iberia Parish

Texas Co. No. 2-B Vermilion Bay, sec. 20-16s-5e. Drlg. sh. 9,068 ft.

Jefferson Parish

Triangle Oil Co. No. 1 Conroe, sec. 12-12s-11e. T.D. 3,752 ft.; D.S. stuck.

Jefferson Davis Parish

Continental Oil Co. No. 1 Faye, sec. 31-10s-3w. 10¾-in. csg. 1,999 ft.; drlg. sh. 9,736 ft.

Humble O. & R. Co. No. 1 T. S. Stegall, sec. 20-9s-5w. 13⅜-in. csg. 2,032 ft.; drlg. sh. 7,396 ft.

Union Sulphur Co. No. 1 Calcasieu National Bank, sec. 12-9s-6w. T.D. 8,524 ft.; 7-in. csg. cmtd. 8,524 ft.

Lafourche Parish

Amerada Pet. Corp. No. 1 South Coast Corp., sec. 34-15s-19e. T.D. 8,745 ft.; 9⅝-in. csg. 7,636 ft.; cg. sh. 10,209 ft.; cored oil sd. 10,182-10,209 ft.

St. Bernard Parish

Southern Sulphur Co. No. 2 State Lake Borgne, sec. 38-14s-15e. 13⅜-in. csg. 303 ft.; T.D. 3,461 ft.; 7-in. csg. 3,461 ft.; drlg. sh. 4,601 ft.

Texas Co. No. 4 State, sec. 14-10s-9e. Drlg. sd. and gravel 647 ft.

St. Martin Parish

Shell Pet. Corp. No. 1 Unit, sec. 11-14s-12e. R.U.

Texas Co. No. 10 St. Martin, sec. 15-8s-7e. Drlg. sh. 9,086 ft.

St. Mary Parish

Shell Pet. Corp. No. 1 Barbour, sec. 21-15s-12e. T.D. 9,301 ft.; S.D.

Texas Co. No. 1 State-Bateman Lake, sec. 21-16s-12e. 7⅝-in. csg. 10,515 ft.; T.D. 11,879 ft.; soft formation; P.B. 11,100 ft.; 5¾-in. csg. 10,245 ft.; perf. csg. 10,978-85 ft.; tstd. S.W.; squeezed off perfs.; W.O.C.

TEXAS

Week Ending December 11

GULF COAST FIELDS

Lockridge—Brazoria County

Gulf Ref. Co. No. 3 Reiss, J. W. Hall Sur. Drlg. sh. and L. 5,539 ft.

Gulf Oil Corp. No. 1 Great Southern, E. D. Robertson Sur. 9⅝-in. csg. 7,145 ft.; T.D. 9,227 ft.; fsg.; P.B. and sdtrkd.; T.D. 9,684 ft.; 7-in. csg. 9,684 ft.; fsg.

Shell Pet. Corp. No. 5-A Ramsey, J. W. Hall Sur. T.D. 6,367 ft.; W.O.C.

Shell Pet. Corp. No. 3-B Ramsey, J. W. Hall Sur. No. 10. Drlg. sh. 3,539 ft.

Hastings Field—Brazoria County

Humble O. & R. Co. No. 3-B Alexander, H.T.&B. Sur. No. 28. T.D. 6,080 ft.; rng. csg.

Humble O. & R. Co. No. 5-D Beers, Perry and Austin Sur. T.D. 6,070 ft.; tstg.

Humble O. & R. Co. No. 6 W. F. Beers, Perry and Austin Sur. R.U.

Humble O. & R. Co. No. 4 King, H.T.&B. Sur. No. 29. T.D. 5,750 ft.; W.O.C.

Humble O. & R. Co. No. 4 Schindler, H.T. &B. Sur. No. 30. R.U.

Humble O. & R. Co. No. 5 W. H. Schindler, H.T.&B. Sur. No. 30. Drlg. sh. 1,254 ft.

Jay Simmons No. 2 C. H. Alexander, H.T. &B. Sur. No. 28. Drlg. sh. 3,510 ft.

Stanolind O. & G. Co. No. 1 L. B. Bisbee, H.T.&B. Sur. No. 37. Drk.

Stanolind O. & G. Co. No. 7 Brown, H.T. &B. Sur. No. 29. T.D. 5,780 ft.; 7-in. csg. 5,778 ft.

Stanolind O. & G. Co. No. 5 Cannon, H.T. &B. Sur. No. 36. T.D. 6,080 ft.; perf. csg.

Stanolind O. & G. Co. No. 6 Cannon, H.T. &B. Sur. No. 36. Drlg. sdy. L. 3,410 ft.

Stanolind O. & G. Co. No. 14 Drake, H.T. &B. Sur. No. 36. T.D. 6,080 ft.; run 7-in. csg.

Stanolind O. & G. Co. No. 6 Guido, H.T.&B. Sur. No. 36. Drlg. sh. 3,910 ft.

Stanolind O. & G. Co. No. 5 J. C. Hutcheson, H.T.&B. Sur. No. 36. Drlg. sd. and sh. 4,360 ft.

Stanolind O. & G. Co. No. 6 Pennock, H.T.&B. Sur. No. 36. T.D. 5,545 ft.; 7-in. csg. 5,536 ft.

Stanolind O. & G. Co. No. 3 Reichardt, H.T.&B. Sur. No. 29. T.D. 6,080 ft.; 7-in. csg. 6,078 ft.

Stanolind O. & G. Co. No. 3 Remley, H.T. &B. Sur. No. 28. T.D. 6,080 ft.; 7-in. csg. 6,078 ft.

Stanolind O. & G. Co. No. 4 Roberts, R. A. Magee Sur. T.D. 5,834 ft.; 7-in. csg. 5,831 ft.

Stanolind O. & G. Co. No. 3 W. S. Wright, H.T.&B. Sur. No. 37. Drlg. sh. 2,500 ft.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 2 Armstrong, Polly & Chance Sur. Drlg. sh. 9,530 ft.

Harrison & Abercrombie No. 1 Copeland-Osborne C. Breen Sur. T.D. 11,028 ft.; 7-in. csg. on bttm.

West Columbia—Brazoria County

Sterling O. & R. Co. No. 1 Smith, Geo. Tennille Sur. Drlg. sh. 4,750 ft.

Texas Co. No. 18 Abrams, George Tennille Sur. Drlg. sh. 5,420 ft.

Texas Co. No. 1 Goldman, G. Tennille Sur. Drlg. L. 4,687 ft.

Texas Co. No. 5 Phillips, George Tennille Sur. T.D. 5,811 ft.; P.B. 5,660 ft.; pulling screen and liner.

Texas Co. No. 3 Smith, G. Tennille Sur. R.U.

Calhoun—Heyser—Victoria County

Blanco Oil Co.-Buchannan No. 3 C. S. Dunnwoody, A. Sisneros Sur. T.D. 5,605 ft.; 7-in. csg. 5,602 ft.; tstd. gas; perf. csg. in 5,400-ft. sd.

Blanco Oil Co. and Buchanan No. 4 C. S. Dunnwoody, A. Sisneros Sur. R.U.

Blanco Oil Co. No. 5 Dunnwoody, A. Sisneros Sur. No. report.

George Echols No. 3 Lander, J. Galban Sur. T.D. 6,040 ft.; run csg.

Gulf Oil Corp. No. 1 Bonner, J. E. Galban Sur. P.B. 5,489 ft.; tstg.

Gulf Ref. Co. No. 2-B Traylor, J. E. Galban Sur. R.U.

Humble O. & R. Co.-Plymouth Oil Co. No. 1 Vandeberg, J. Galban Sur. Drlg. 2,987 ft.

Humble O. & R. Co.-Plymouth Oil Co. No. 15, E. H. Welder, J. M. Rios Sur. R.U.

Humble O. & R. Co. No. 18-B P. H. Welder, A. Sisneros Sur. R.U.

Magnolia Pet. Co. No. 3 O. M. Lander, J. E. Galban Sur. Spd.

Normandie Oil Co. No. 8 J. G. Cook, A. Sisneros Sur. Cg. 5,412 ft.

Sinclair Prairie Oil Co. No. 5 Bennett, A. Sisneros Sur. Cg. 5,612 ft.

Sinclair Prairie Oil Co. No. 7 Wm. Bennett, A. Sisneros Sur. Drlg. sh. 1,810 ft.

Sun Oil Co. No. 4 Coffey, J. E. Galban Sur. Drlg. sh. 4,930 ft.

Seabreeze—Chambers County

Sun Oil Co. No. 1 Hoffman, T&N.O. Sur. 131. T.D. 8,465 ft.; sd. and sh. showing oil; 7-in. csg. 8,425 ft.; W.O.C.

Sun Oil Co. No. 2-A Hebert-Broussard, T.&N.O. Sur. 127. T.D. 8,490 ft.; 7-in. csg. 8,467 ft.

Silsbee—Hardin County

Republic Prod. Co.-Houston Oil Co. No. 1 Frazier, G. W. Brooks Sur. R.U.

Republic Prod. Co.-Houston Oil Co. No. 1 Howell, George W. Brooks Sur. Loc.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 1-B Dopslauf, W.C.R.R. Sur. No. 2, Blk. 1. 16-in. csg. 64 ft.; T.D. 6,829 ft.; 7-in. csg. on bttm.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 M. E. Oates, Reels & Trobough Sur. T.D. 3,835 ft.; 7-in. csg. 3,835 ft.; flwd. oil and wtr.; went dead; install flow valves.

Friendswood—Harris County

Humble O. & R. Co. No. 1 Cox, Perry and Austin Sur. T.D. 6,028 ft.; W.O.C.

Humble O. & R. Co. No. 1 C. R. Cottingham et al, T. Choate Sur. Drk.

Humble O. & R. Co. No. 1 J. L. Jones and E. A. Gray, Perry and Austin Sur. Drk.

Humble O. & R. Co. No. 1 Kiesling, T. Choate Sur. R.U.

Humble O. & R. Co. No. 1 J. H. Ross et al, T. Choate Sur. Drk.

Humble O. & R. Co. No. 1 Gail Whitcomb & Grandstaff, T. Choate Sur. T.D. 6,175 ft.; abd.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 3 Phelan, S. Stivers Sur. Run surf. csg.

Hardin—Liberty County

Atlantic Ref. Co. No. 1 Wm. McMurtry, H. B. Johnson Sur. Loc.

Jack Frazier No. 2 Lynott & Buffam, J. Robson Sur. R.U.

Jack Frazier No. 1 Buffam-Benning, J. Robeson Sur. R.U.

Gulf Oil Corp. No. 1 V. B. Hinson, H. B. Johnson Sur. 10¾-in. csg. 1,908 ft.; drlg. sh. 5,212 ft.

Halliburton Oil Prod. Co. No. 1 Hanchey, H. B. Johnson Sur. R.U.

Humble O. & R. Co. No. 1 Chambers, A. B. Hardin Sur. T.D. 7,591 ft.; run csg.
Humble O. & R. Co. No. 2 Myrtle Chambers, A. B. Hardin Sur. R.U.
Jameson-Bryon No. 1 W. B. Hinson, H. B. Johnson Sur. T.D. 7,615 ft.; tstg.
Shell Pet. Corp. No. 1 Cessna, A. B. Hardin Sur. Drlg. sh. 5,612 ft.
Strake Pet. Corp. No. 3 Finley, A. B. Hardin Sur. T.D. 7,560 ft.; W.O.C.
Strake Pet. Corp. No. 4 Finley, A. B. Hardin Sur. Spd.
Strake Pet. Corp. No. 2 W. T. Finley, A. B. Hardin Sur. P.B. T.D.; perf. csg. 7,542-46 ft.; I.P. 146 B.P.D., ¼-in. ck.
Sun Oil Co. No. 1 Cessna, A. B. Hardin Sur. Drlg. sh. 4,737 ft.
Woodley Pet. Co. No. 5 McMurtry, H. B. Johnson Sur. R.U.

South Call—Newton County

Houston Oil Co. No. 2 Sabinetram. 10¾-in. csg. 1,936 ft.; T.D. 7,123 ft.; 7-in. csg. 7,105 ft.; flwd. oil; sanded up; pulling screen.
Houston Oil Co.-Republic Prod. Co. No. 3 Sabine Tram, H.&T.C. Sur., sec. 37. Drk.

Bay City—Matagorda County

Hamman Expl. Co. No. 1 Sloan, J. T. Belknap Sur. 10¾-in. csg. 1,200 ft.; drlg. sh. 6,812 ft.
Smith and McDannald No. 1 Gaines, E. Hall Sur. T.D. 8,212 ft.; 7-in. csg. 8,117 ft.; tstg.

Buckeye—Matagorda County

United North & South Development Co. No. 1 G.B.M., Cotton Lge. 7-in. csg. 8,667 ft.; T.D. 10,500 ft.; hole cleaned; W.O.O.

Palacios—Matagorda County

Sun Oil Co. No. 1 Bay Shore Farms, Lewis Goodwin Sur. T.D. 11,327 ft.; 7-in. csg. 11,300 ft.; perf. csg. 9,800-25 ft.

Orange—Orange County

Glenn McCarthy No. 1 Brown, B. Graner Sur. T.D. 7,507 ft.; abd.
Gulf Oil Corp. No. 1 Orange National Bk., Wm. Dyson Sur. M.I.M.
Union Prod. Co. No. 2 Lutcher-Moore, Dyson Sur. Spd.

Segno—Polk County

Gulf Ref. Co. No. 2 Wing, I.&G.N. Sur. No. 15. Drlg. sh. 5,012 ft.

Spurger—Tyler County

Republic Prod. Co. No. 6 Hurd, N. Hurd Sur. Drlg. sh. 7,510 ft.

Keeran Field—Victoria

Union Oil Co. No. 8 Keeran Est., M. De Leon Sur. Drlg. sh. 5,937 ft.

McFaddin—Victoria County

Barnsdall Oil Co. No. 1 J. A. McFaddin Est., Foster Lewers Sur. T.D. 4,412 ft.; oil sd.; run csg.

Magnet—Wharton County

Humble O. & R. Co. No. 4 Cockburn, S. Castleman Sur. T.D. 5,542 ft.; set cmt. retainer for squeeze job.

GULF COAST WILDCATS

Brazoria County

Pure Oil Co. No. 1 Smith, S. F. Austin Sur. Drlg. sh. 7,017 ft.
Texas Co. No. 4 Freeport Sulphur Co., C. Arriola Sur. 10-in. csg. 1,214 ft.; drlg. sd. and pyrites 2,332 ft.

Chambers County

Merit Oil Co. No. 1 T. & M. Wright, C. Smith Sur. T.D. 7,515 ft.; 7-in. csg. 6,602 ft.; perf. csg. 6,431-35 ft.; flwd. oil and S.W.; squeezed off perf.; re-perf. csg. 6,436-38 ft.; tstd. S.W.
Standard Oil Co. of Texas and California Oil Co. No. 1 State Galveston Bay. Bldg. drk.

Colorado County

O. C. Garvey No. 1 Buback-Ernest. M. Lapham Sur. Drlg. sh. 6,210 ft.

Fort Bend County

Chapman Minerals Corp. No. 1 Sugarland Industries, Geo. Brown & Belknap Sur. T.D. 8,010 ft.; S.D.
Medford and Burke No. 1 M. T. Wood, S. M. Stevens Sur. Drk.

Grimes County

Hubert Holt No. 1 Greer et al, Patrick B. O'Connor Sur. Drk.

Harris County

H. C. Cockburn No. 1 White, Harris & Carpenter Sur. T.D. 6,017 ft.; abd.
H. J. DeArman No. 1 Geiseka, Isaac Bunker Sur. Drlg. sh. 6,027 ft.
Stanolind O. & G. Co. No. 2 Warren Minerals, Walker Wade Sur. Drlg. sh. and L. 6,640 ft.
Texas Gulf Prod. Co. No. 1 Rath, W. C. Sevey Sur. 10¾-in. csg. 1,483 ft.; drlg. sh. 5,115 ft.

Jackson County

Cockburn et al No. 1 Hodges, I.&.G.N. Sur. No. 7. T.D. 6,525 ft.; rng. 5½-in. csg. to bttm. to test upper sands; perf. csg. to test.
Sam G. Harrison et al No. 1 H. A Meyers, O. York Sur. 10¾-in. csg. 530 ft.; cg. sh. 5,352 ft.
Magnolia Pet. Co. No. 1 West Ranch, R Musquez Sur. Drlg. sh. 1,437 ft.

Jefferson County

Shell Pet. Corp. No. 1 W. P. McFaddin, S. A. Pace Sur. Cg. sd. showing oil 5,666 ft.
Glenn McCarthy No. 1 J. E. Broussard, C. Hillbrand Sur. Drlg. sh. 6,759 ft.

Liberty County

Humble O. & R. Co. No. 1-A E. F. Moore, B. Barrows Sur. Spd.

Matagorda County

Sun Oil Co. No. 1 Fred Robbins, C. H. Vandeveer Sur. Drlg. sh. 7,853 ft.

Polk County

National Standard Oil Co. No. 1 W. T. Carter, M. S. Womack Sur. Drlg. sh. 2,712 ft.
Stewart Oil Co. No. 1 Galloway, J. Ringgold Sur. R.U.

Waller County

J. Brian Eby No. 1 Wm. Rice Institute, H. Stephens Sur. Cg. sh. 7,449 ft.
C. W. Markel et al No. 1 Hall, B. B. Guerrgnd Sur. No. 261. R.U.
Stanolind O. & G. Co. No. 1 Security Trust Co., H.&T.C. Sur. Cg. hd. sd. 7,391 ft.

Wharton County

Pierce Est., Inc. No. 1 Pierce Est., I.&G.N. Sur. No. 7. Drlg. sh. 1,600 ft.
Strake Pet. Co. No. 1 Strunck, L. P. Jennings Sur. Drlg. sh. 5,312 ft.
Texas Co. No. 1 Johnson, John Bognad Sur. 10¾-in. csg. 1,095 ft.; drlg. sd. and sh. 5,340 ft.

S. W. TEXAS WILDCATS

Atascosa County

L. W. Steiren No. 1 Crawford, 4 mi. W of Anchorage. T.D. 3,476 feet; chalk; bailed dry; pull tbg. and liner to drill deeper.

Bastrop County

J. W. Bibb No. 1 Lentz, F. Wilkenson Sur. Cg. soft L., slight oil odor 2,530 ft.

Caldwell County

D. H. Wilson No. 1 Alexander, D. Benton Sur. T.D. 1,850 ft.; 7-in. csg. 1,800 ft.; S.D.
Fain Gillock No. 1 Kelly, Berry Sur. Acd.; swbd. wtr. and oil; 5½-in. at 1,457 ft.; T.D. 1,706 ft.; swbd. dry; S.D.
McNeill Pet. Co. No. 1 Moreno, Allen Sur. T.D. 1,752 ft.; flwg. est. 25 bbls. oil per day; R.U. to pump; moved off rig; no gauge.

Dimmitt County

Teas & Maryland Corp. No. 1 McKnight, Blk. 13, sec. 23. Drlg. sh. 5,037 ft.

Duval County

T. R. Andrews No. 1 Hazelwood, Hopkins Sur. R.U.
Karney Gravis No. 1 Frederick, J. H. Gibson Sur. T.D. 735 ft.
Magnolia Pet. Co. No. 1 Duval County Ranch Co., G.B.&N.C.R.R. Sur. No. 61. Loc.
Magnolia Pet. Co. No. 1 A. Lopez, M. Lopez Sur. No. 82. Spd.

Edwards County

Amon G. Carter No. 1 Sweeten, SE¼. Blk. 2, Sur. 49. T.D. 5,111 ft.; rng. protection string of csg.
Dan Auld No. 1 Henderson, sec. 46, Blk. E. Drlg. sdy. L. 1,865 ft.; no report.
C. V. Lyman No. 1 Brown, Blk. 3. O.W. D.D.; T.D. 3,001 ft.; cleaning out hole.

Frio County

Pagenkopf & Jamieson No. 1 Houston Est., 2,254-ac. tr., J. Figuerroa Sur. S.O. 2,610-03 ft.; set csg. to test 7-in. at 2,480 ft.; swbg.; S.O.&G. and wash wtr.; T.D. 2,651 ft.; set csg.; P.B. 2,607 ft.; pmpg. 30 bbls. fluid per day, 60 per cent oil; fluid decreasing.

Goliad County

Goliad Oil Corp. No. 1-A Cole, Lot 33, Goliad town tr. T.D. 5,687 ft.; P.B. 5,609 ft.; prep. to perf. liner from 5,500 ft. to 5,603 ft.; cutting and pulling drill stem.
Rual Swiger No. 1-B Wood, J. Shearn Sur. T.D. 5,048 ft.; S.W. sd.; oil sd. 5,044-48 ft.; perf. csg. 5,008-25 ft.; swbd. S.W.; set retainer 5,000 ft.; squeezed off perf.

Gonzales County

W. B. Osborn No. 1 Wells, Jose de la Baume Sur. 10-in. csg. 284 ft.; T.D. 4,289 ft.; abd.

Guadalupe County

F. H. Gallagher No. 1 Howell, J. Darst Sur. No. 10. S.D. 2,600 ft.
Kreiger & Douglass No. 1 Oliver, R. Smith Sur. Drlg. sh. 1,302 ft.
Mehu Oil Corp. No. 1 Schulze, Chenault Sur. T.D. 1,705 ft.; abd.

Hidalgo County

Atlantic Ref. Co. No. 1 American Rio Grande. 7-in. csg. 8,505 ft.; T.D. 9,100 ft.; fsg.
Y. & B. Oil Co. No. 1 Waite, Tr. 382, Los Jidos Gr. Drlg. sh. 5,712 ft.

Jim Hogg County

Darby Pet. Co. No. 1-C Holbein, Las Animas Gr. T.D. 1,865 ft.; comp. as gas well.

Jim Wells County

H. M. Hill et al No. 1 Kuether, Lots 70 and 75, sec. 52, Haldeman Subd. Drlg. sh. 2,985 ft.
Howell et al No. 1 Talbot, 181-ac. tr., Lavaca Gr. T.D. 6,012 ft.; P.B. 5,178 gas, some oil; reperf. csg. 3,317-22 ft.; swbg.; showing S.W.; squeezed off perf. 3,600-07 ft.
Magnolia Pet. Co. No. 7 Seeligson, 10,433-ac. tr., Los Jabonc illos Gr. T.D. 8,162 ft.; P.B. 6,770 ft.; perf. csg. 6,713-23 ft.; showed S.W.; perf. csg. 6,585-95 ft.; flwd. 205 bbls. first 13 hrs., various chokes; T.P. 2,000 lbs.; C.P. 1,250 lbs.
H. J. Porter No. 1 Charles E. Walcott, Zenobia Cuellar Sur. 10¾-in. csg. 228 ft.; 10-in. csg. 516 ft.; drlg. sh. 5,939 ft.

Karnes County

Ivan Howard No. 1 Moczygemba, Erasmo Seguin 5, League Gr. Top sd S.O. 2,159 ft.; oil sd. 2,174-78 ft.; set csg. 2,187 ft.; T.D. 2,517 ft.; P.B. 2,178 ft.; perf. csg. 2,165-70 ft.

Kenedy County

La Sal Vieja Oil Corp. No. 1 Garcia Ld. & Cattle Co., Blk. 95, Tr. 73. T.D. 8,135 ft.; S.D.

Kleberg County

Cinco Oil Co. No. 1 Killam, Lot 8, Blk. 53, Kleberg Town & Imp. Co. Subd. R.U.
Magnolia Pet. Co. No. 1 Dietz, Gabriel Trevino Sur. 13⅜-in. csg. 1,220 ft.
Superior Oil Co. No. 1 Koch, sec. 32, Blk. 26. Set surf. csg.; cg. 5,872 ft.

LaSalle County

Ralph B. Reed No. 1 Yeager, Blk. 7, Sec. 8, Wallace Subd., Yeager ranch. Drlg. sh. 400 ft.

Lee County

Jas. E. Pederson No. 1 Turner, David Hudson Sur. S.O.&G. 6,140-80 ft.; sdtrkd. at 4,600 ft. and drld. to 6,132 ft.; S.O.&G.; set csg. 6,021 ft.; acdzg. with 20-bbl. load; when opened well flwd. 20-bbl. head and went dead; swbd. oil and wtr.; acd.; pulling tbg. to rework and test.
Eleoussa Oil Co. No. 1 Sanders, J. Vin Roeder Sur. S.D. 3,975 ft.

Live Oak County

James Chew No. 1 Alma McNeil, Alexander Parks Sur. T.D. 450 ft.; W.O.C.
C. G. Grimes et al No. 1 W. A. Friedle, Refugio Co. Sch. Ld. Sur. T.D. 3,787 ft.; abd.
Ranco Oil Corp. No. 1 Cook Ranch sec. 3, J. Poitevent Sur. Drlg. sh. 3,230 ft.
Reynosa Oil Corp. No. 1-A Nichols, Simeon Ryan Sur. S.D. 1,450 ft.
V. G. Schimmel No. 1 West, sec. 59, Haas Sur. R.U.
J. H. Turner No. 1 Young, Lewis Ayers Sur. 10-in. csg. 77 ft.

McMullen County

Covle & Bedwell No. 1 Two Rivers Rnch. Co., sec. 60. Drlg. sh. 40 ft.
Duncan Drlg. Co. No. 1 Martin Henry, sec. 6. Drlg. 587 ft.
Mills Bennett Prod. Co. No. 1 Nueces Ld. & Live Stock Co., Sur. No. 166. R.U.

Medina County

M. L. Walker No. 1 Riff, Hans Sur. No. 43. S.D. 920 ft.

Nueces County

Culton & Meador No. 1 Bailey Est., Blk. 65. J. Elliff Subd., Joaquin Lopez de Herrera Sur. T.D. 6,543 ft.; abd.
L. A. Douglas No. 1 Charles McKenzie, Sur. 419. Drlg. sh. 3,525 ft.
Richardson Pet. Co. No. 1 Chapman, sec. 43, Laureles Farm Tr. No. 43. Drlg. sh. 4,364 ft.
Sannix Oil Co. No. 1 Nesloney, 760-ac. tr., Casa Blanca Gr. Drlg. sh. 6,125 ft.
Southern Minerals Corp. No. 3 King, Tr. 6. T.D. 4,015 ft.; tstg.
Southern Minerals Corp. No. 1 Walker, R. Garcia Sur. 10¾-in. csg. 1,016 ft.; drlg. sh. 5,350 ft.
Union Prod. Co. No. 1 Simmons, 1,000-ac tr., Agua Dulce Gr. T.D. 6,844 ft.; to core ahead.

Refugio County

Hogan Oil Co. No. 1 Kelley, M. & A. Roache Sur. No report.

San Patricio County

A. L. Bob No. 2 Green, T. T. Williamson Sur. Drlg. sh. 5,710 ft.
Conroe Drlg. Co. No. 1 J. R. Daugherty, James McGloin Sur. Rng. surf. csg. 800 ft.
Rutherford O. Corp. No. 1 George, Lot 12, Geo. Paul Subd. T.D. 6,287 ft.; fsg.
F. B. Schwab No. 1 Smith, Juan Hart & Sons Sur. R.U.

Starr County

Collins No. 1 Guerra, Sh. 6, San Jose Gr. T.D. 6,176 ft.; 7-in. csg. 6,170 ft.; perf. csg. 6,125-27 ft.; showed S.W., slight show of oil.
Dodd Tr. No. 1 Wardner, Vela Sur., Porc. 84. S.D. 1,265 ft.
Sioux Oil Co. No. 6 Ricaby, Porc. 83. T.D. 1,751 ft.; well blew out after being abd.; flwg. gas and mud.
Sun Oil Co. No. 1-F Guerra, Salvador Garcia heirs Sur., Porc. 109. T.D. 3,910 ft.; abd.
Transwestern Oil Co. and Davenport No. 3 Slick, sec. 527. T.D. 6,862 ft.; rec. all but 75 ft. pipe; S.D.

Travis County

W. O. Caffey No. 1 Bremond, 104.5-ac. tr., Santiago del Valle Sur. S.D. 545 ft.
D. E. Hamer No. 1 Benson, Wilson Sur. T.D. 406 ft.; abd.

Victoria County

W. V. Bowles No. 1 Robertson, T. C. Burnham Sur. T.D. 6,121 ft.; P.B. to sdtrk.; T.D. 5,629 ft.; D.S.T. 5,610-29 ft.; showed 120 ft. of oil, 120 ft. of S.W.; P.B. to sdtrk. and test 5,100-foot sd.
Stanolind O. & G. Co. No. 1 Henderson & Pickering. T.D. 7,468 ft.; P.B. 6,424 ft.; 7-in. csg. 6,423 ft.; perf. csg. 6,371 ft.; showed oil and S.W.

Webb County

Bridwell Oil Co. No. 1 Billings, Sur. 36. M.I.M.
Kirkwood & Morgan No. 1 Garcia, Villareal Sur. 720. T.D. 2,005 ft.; 5½-in. csg. 2,005 ft.
Lemp Oil Co. No. 1 Clark. 500-ac. tr., Porc. 33. Drlg. sdy. sh. 1,053 ft.
Lewis et al No. 1 Garza, Sur. 48. Drlg. sd. 2,658 ft.
Mills Bennett Prod. Co. No. 2 Gates, N. A. Baker Sur. No. 22. Drlg. sh. 1,735 ft.
J. R. B. Moore No. 1 Garcia-Villareal, S. Mas Sur. Perf. csg. 1,907-11 ft.; tstd. gas; squeezed off perforations.

Wilson County

Pattico Oil Co. No. 1 Keller, Karnes Co. Sch. Ld. Sur. Drlg. 1,127 ft.

Zapata County

Ray L. Martin No. 2 Vela, Sh. 4, E. L. Grullo Gr. 10-in. csg. 100 ft.

S. W. TEXAS PROVEN

Batesville—Zavalla County

Wilcox O. & G. Co. No. 2 Gillam, G.W.T. &P.R.R. Sur. T.D. 3,977 ft.; rng. 7-in. csg. to test.

EAST TEXAS

(Border Counties)

Cass County

W. C. Feazel No. 1 Parker, G. Crowder Sur. T.D. 6,090 ft.; set 7-in. csg. 6,030 ft.; tstg.
Union Prod. Co. No. 3 Bangus Unit, Tromwell Sur. Drlg. 4,765 ft.
Union Prod. Co. No. 1 Carter et al, Holmes Sur. Comp. 458 B.P.D., ¼-in. ck.; T.D. 6,110 ft.
Union Prod. Co. No. 3-A Starke, D. Gilliam Sur. 7-in. csg. 5,978 ft.; T.D. 6,050 ft.; comp. 143 B.P.D., ⅛-in. ck.; T.D. 6,050 ft.

Harrison County

Ark.-La. Gas Co. No. 1 C. M. Abney, E. Little Sur. Drlg. 3,042 ft.

Marion County—Rodessa

Arkansas-Louisiana Gas Co. No. 2 Wade Houston, Coy Sur. Drlg. 5,769 ft.
Geo. Barham No. 1 Brantley, Bennington Sur. Drlg. 4,551 ft.
Fohs Oil Co. No. 1 Kemper, Bennington Sur. 10¾-in. at 2,049 ft.; T.D. 2,059 ft.
Gulf Ref. Co. No. 1 Grubaugh, Coy Sur. Drlg. 5,930 ft.
Gulf Ref. Co. No. 1 Kemper, Bennington Sur. Drlg. 5,546 ft.
Heyser-Heard & Clardy No. 2 Henderson, R. Bennington Sur. Drlg. 2,926 ft.
Shell Pet. Corp. No. 1 Cooke, R. Bennington Sur., 80-ac. tr. T.D. 6,084 ft.; 7-in. csg. 6,044 ft.
Shell Pet. Corp. No. 1 L. Henderson Unit, R. Bennington Sur. 7-in. 5,981 ft.; T.D. 6,026 ft.
Shell Pet. Corp. No. 1-B Henderson, Bennington Sur. Drlg. sh. and L. 4,249 ft.
H. B. Turner et al No. 1 Scuddy, Ina Hanks Sur. Drlg. 5,100 ft.

Panola County

C. K. Crews No. 1 Graves, McGowan Sur. Drlg. 350 ft.
Danciger O. & G. Co. No. 1 Tatum, A. Bissell Sur. T.D. 6,514 ft.; perf. csg. 5,253-49 ft.; tstd. S.W.; T.D. 6,514 ft.; P.B. and perf. 2,720 ft.
Magnolia Pet. Co. No. 2 E. A. Hull, Thos. Applewhite Sur. T.D. 8,717 ft.; P.B. 5,950 ft.; perf. 5,906-36 ft.

WEST TEXAS WILDCATS

Andrews County

Drilling & Exploration Co. No. 1 Thornberry, P.S.L. Sur. M.I.M.
M. S. Forgeron et al No. 1 Lockhart & Brown, C NE¼ sec. 20, Blk. A-41, P.S.L. Sur. S.D. 179 ft.
Gulf Oil Corp. No. 1 State, sec. 8, Blk. 14. Drlg. 4,508 ft.
Honolulu Oil Co. No. 1-6 Parker, sec. 6, Blk. A-66, P.S.L. Sur. Drlg. 3,210 ft.
Seaboard Oil Corp. No. 1 Munger-Nix, sec. 1, Blk. A-4, P.S.L. Sur. Spd.

Bailey County

Duffey & Etz No. 1 Enochs, Tract 66, League 182, Floyd Co. School Lands Sur. Drlg. 4,160 ft.

Borden County

Continental Oil Co. No. 1-A Clayton, sec. 27, Blk. 32, Twp. 4n, T.&P. Sur. Drlg. 2,770 ft.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. Drlg. 6,384 ft.
Toney Hess No. 1 Decie, C.T.R.R. Sur. S.D. 925 ft.
Storey No. 1 Wilson, sec. 3, Blk. 212, T.& St.L. Sur. S.D. 2,545 ft.

Cochran County

Devonian Oil Co. No. 1 Duggan, Oldham Co. Sch. Ld. Sur. T.D. 5,044 ft.; swbg. oil and tstg.
J. R. Meeker et al No. 1 Wright, Mills City Sch. Ld. Drlg. 1,450 ft.
P. N. Wiggins et al No. 1 Dean, NE cor. League 58, Martin Co. School Lands. T.D. 5,020 ft.; swb. 7 B.P.H.

Concho County

Sam Murray No. 1 R. G. Armor, sec. 105, T.&N.O. Sur. Drlg. 70 ft.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, sec. 39, Blk. W, T.&P. Sur. Drlg. 1,460 ft.
H. E. Ogden et al No. 1 Rawlins, sec. 390, Blk. B-21. Drlg. 575 ft.

Cottle County

F. P. Hinds et al No. 1 Lee, 5 mi. SW of Paducah, A.B.&M. Sur. Drlg. 3,905 ft.

Crane County

J. W. Hampton No. 1 Thackston, W. L. Wilkinson Sur.; drlg. 800 ft.
Wilcox O. & G. Co. No. 1 McKnight, sec. 9, Blk. 46, Twp. 3s, G.M.M.B.&A. Sur. T.D. 6,177 ft.; drill pipe free; prep. to drill ahead.

Crockett County

Moore Bros. No. 1 Perner, sec. 37, Blk. 2, I.&G.N. Sur. S.D.; W.O.; T.D. 8,000 ft.
J. N. Simpson No. 1 Hoover, G.C.&S.F. Sur. Drlg. 2,058 ft.
Stewart & Cormas No. 1 Hoover, sec. 1, Blk. FF, B.B. Sur. Bailing wtr. at 1,853 ft.

Culberson County

Grisham & Hunter No. 1 fee, sec. 14, Blk. 42, P.S.L. Sur. M.I.S.T.
C. A. Jarrell et al No. 1 C. M. Caldwell, C of SW¼ sec. 15, Blk. 100, P.S.L. Sur. S.D. 507 ft.; H.F.O.; drlg. water well 150 ft.

Dawson County

Albaugh No. 1 Robinson, E.L.R.R. Sur. T.D. 5,038 ft.; tstg.

Dickens County

C. E. Litchfield No. 1 Harris, sec. 354, Blk. 1, H.&G.N. Sur. Fsg. 1,610 ft.
J. F. Morrisey et al No. 1 C. L. Bird, sec. 290, Blk. 1, H.&G.N. Sur. S.D.; W.O. 2,000 ft.

Ector County

Bodins et al No. 1 Edwards. Drlg. 3,630 ft.
Wentz Oil Co. No. 1-A TXL. Comp.; I.P.F. 1,830 B.O.P.D.
Wentz Oil Co. No. 1-D Parker. C.O. 4,245 ft.
Fred Turner No. 1-A Parker. C.O. 4,317 ft.
Oil Well Dev. Co. No. 1 Cowden. Drlg. 4,287 ft.
L. H. Wentz Oil Co. No. 1-B Parker. Drlg. 3,910 ft.
Borgodi-Bowles No. 1 TXL. T.D. 4,280 comp.; I.P.F. 95 B.O.P.D.
Melhoan Drlg. Co. No. 1 Gulf Blakeney. Cg. 4,118 ft.

Edwards County

A. P. Carter No. 1 F. D. Sweeten, B.&B. Sur., 2 mi. E of Rock Springs. T.D. 5,112 ft.; prep. D.D.
Lyles & Dan Auld No. 1 Henderson, H.E. &W.T. Sur. Drlg. 1,975 ft.
Richmond Drlg. Co. No. 1 Brown, G.W. T.&P. Sur. Drlg. 3,795 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. Drlg. 3,559 ft.

Fisher County

I. J. Allen No. 1 H. S. Newman, Lot 49, Bastrop Co. Sch. Lds. D.&A.; T.D. 3,450 ft.
Consolidated Oil Co. et al No. 1 Florida. D.&A.; T.D. 3,555 ft.
Daniel & Rhodes No. 1 Nichless, Geo. W. Lawrence Sur. C.O. 3,300 ft.
Dean Bros. No. 1 Young. Drlg. 1,600 ft.
General Crude Oil Co. No. 1 Morrow sec. 185, Blk. 2, H.&T.C. Sur. Drlg. 3,537 ft.
Southern Oil Co. No. 1 Bocat, H.&T.C. Sur. Prep. run csg. at 3,654 ft.

Floyd County

Mills Bennett No. 1 T. Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. Drlg. 2,900 ft.

Gaines County

Amerada Pet. Corp. No. 1 R. W. Robertson, sec. 198, Blk. G, W.T.R.R. Sur. Loc.
Carter, Continental & Plymouth et al No. 1 Geisecke. S.D. 2,130 ft.
Continental Oil Co. No. 2 Jones, sec. 1, Blk. A-8, P.S.L. Sur. S.D.O. 4,908 ft.; drlg. 4,960 ft.
Mitchell & Sullivan No. 1 Shell, T. S. Riley, sec. 447, Blk. G, C.C.S.D.&R.G.N.G. Sur. D.&A.; T.D. 4,849 ft.
Shell Pet. Corp. No. 1 M. B. Robinson, sec. 344, Blk. G, C.C.S.D.&R.G.N.G. Sur. T.D. 190 ft.

Garza County

M. L. Richards No. 1 Slaughter. U.R. 2,930 ft.

Glasscock County

Amerada Pet. Co. No. 1 Neal, T.&P. Sur. D.&A.; T.D. 3,370 ft.
O. B. Greathouse No. 1 Burns, sec. 221, Blk. 29, W.&N.W. Sur. Loc.

Hockley County

Sid Richardson No. 1 Slaughter, Maverick Cty. Sch. Lds. Loc.
The Texas Co. No. 2 Slaughter, Labour 92, League 37, Zavalla Co. Sch. Lds. Drlg. 4,750 ft.

Howard County

Lockhart Oil Co. No. 1 Hussinger, sec. 67, Blk. 29, W.&N.W. Sur. Loc.
W. F. McDermott et al No. 1 Lucas, sec. 18, Blk. 29, Twp. 1n, T.&P. Sur., 5 mi. N of Dodge pool. Drlg. 2,542 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp 6 Drlg. 3,428 ft.
Haymon Krupp No. 1 Briggs, sec. 24, Blk 73, Twp. 7, T.&P. Sur. Drlg. 2,165 ft.

Jeff Davis County

H. D. Wilcox et al No. 1 Jones-Coffield. Drlg. 3,433 ft.

Loving County

Barnett Pet. Co. No. 1-A Johnson, sec. 2, Blk. 57, Twp. 1, T.&P. Sur. S.D.R. 3,728 ft.
Carpenter & Grierson No. 1 Mrs. Bennie Barnes, sec. 22, Blk. C-25, P.S.L. Sur. Loc.
Woodley Pet. Co. No. 1 Klah, T.&P. Sur. C.O. 3,962 ft.

McCulloch County

Westbrook et al No. 1 Johnson, A. Nevendorf Sur. Drlg. 1,803 ft.
Salt Gap Drlg. Co. No. 1 Ward. Drlg. 1,900 ft.
Nixon No. 1 Pierce. Drlg. 810 ft.

Martin County

J. L. Green et al No. 1 O. B. Holt, C of Labour 20, Lge. 319, Garza Co. Sch. Lds. D.&A.; T.D. 4,744 ft.
Harris-Anderson Oil Corp. No. 1 Mollie Robinson, sec. 33, Blk. 38, T.&P. Sur. Drlg. 710 ft.

Menard County

G. A. Clements No. 1 Murchison, sec. 80, B.S.&S. Sur., 8 mi. E of Menard. U.R. 310 ft.
C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. R.U.M.

Nolan County

Marland-Drake Drlg. Co. No. 1 J. H. Withers, sec. 65, Blk. 21, T.&P. Sur. Loc.

Pecos County

Ed Falney No. 1 Trees, sec. 63, Blk. 8, H.&G.N. Sur. Drlg. 960 ft.
Humble O. & R. Co. No. 1 Belding et al, 9 mi. SW of Ft. Stockton. P.B. 2,618 ft. Tstg.
Humble O. & R. Co. No. 1 Butz, sec. 104, Blk. O.W. S.D.R. 730 ft.
Humble O. & R. Co. No. 1 Pryor, sec. 100, Blk. OW. Comp. D.&A.
Messenger & Osborn No. 1 Humble-Young, sec. 49, Blk. 10, H.&G.N. Sur. Prep. to acidize 1,807 ft.
S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. 6,521 ft.
Thompson & Minshall No. 1 Michaelson, 660 ft. N and W, sec. 24, Blk. 146, T.&St.L. Sur. Drlg. 1,640 ft.
Wilcox O. & G. Co. No. 1 Serf, sec. 27, Blk. 130, T.&St.L. Sur. Drlg. wtr. well.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. Drlg. new hole from 3,100 ft.

Reeves County

Barnett Pet. Corp. No. 1 Ely, sec. 38, Blk. 71, P.S.L. Sur., 12 mi. NW of Toyah. Drlg. 1,960 ft.
Ohio Oil Co. No. 1 Papham, sec. 18, Blk. 54, T.&P. Sur. M.I.S.T.

Runnels County

Homer Price No. 1 Beddo, sec. 51, Thompson, Casey Sur. U.R. 2,785 ft.
E Z Oil Co. No. 1 B. Fletcher, E. C. Good Sur. T.D. 4,394 ft.; prep. P.B. 4,360 ft.; W.O.C.

Schleicher County

J. M. Cooper No. 2 B. Page, sec. 40, Blk. L, G.H.&S.A. Eur. Cmtd. cavings at 4,730 ft.
Tex-Tor Oil Corp. No. 1 Judkins & Spencer, C of SW¼ sec. 33, Blk. A, A.&B. Sur. Tstg. 5,063 ft.

Scurry County

Robinson Drlg. Co. No. 1 Martin, sec. 147, H.&T.C. Sur. S.D.O. 3,500 ft.
T. G. Shaw Oil Co. No. 1 First Natl. Bank. Drlg. 2,484 ft.

Sterling County

Wilcox O. & G. Co. No. 1 Kinnebrew Est., sec. 101, Blk. 2, H.&T.C. Sur. D.&A.

Stonewall County

General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. Drlg.

Sutton County

Ordovician Oil Co. No. 1 Evans, sec. 1, L. Stubblefield Sur., 32 mi. SE of Sonora. S.D. 3,475 ft.

Terrell County

D. & S. Oil Co. No. 1 Sam Bell. S.D. 345 ft

Terry County

C. H. Hutto No. 1 Brownfield, E.L.R.R. Sur. S.D. 670 ft. for pipe.

Tom Green County

Humble O. & R. Co. No. 1 Lewis & Wardlaw, sec. 5, Blk. 17, H.&T.C. Sur. Fsg. 3,622 ft.

Upton County

Rutter et al No. 1 Egolb, sec. 5, J. H. Gibson Sur. S.D.O. 3,200 ft.
J. S. Pitman No. 1 D. Elder, C.C.S.D.& R.G.N.G. Sur., Blk. 3, sec. 14. U.R. 835 ft.

Ward County

M. J. Delaney No. 1 J. E. Cooper, H.&T.C. Sur. S.D. 550 ft.
Engineer Oil Co. No. 1 Aycock, H.&T.C. Sur. S.D.O. 2,580 ft.
Hoss & Downey No. 1 Meyers, sec. 17, Blk. 32, H.&T.C. Sur. Loc.
Hoss & Downey No. 1 Ross Avery, sec. 36, Blk. 1, H.&T.C. Sur. Drlg. 175 ft.
Magnolia Pet. Co. No. 1-79 Sealey, G.M. M.B.&A. Sur. D.&A.
Patillo & Webster No. 1 Johnson. Drlg. 1,020 ft.
Province & O'Quinn No. 2 Tubbs, H.&T. C. Sur. Comp.; I.P.F. 96 B.O.P.D.; 2,150-2,210 ft.
L. F. White et al No. 1 Rector-Monroe, E cor. sec. 3, Blk. 1, W.&N.W. Sur. S.D. 4,710 ft.

Winkler County

Stogner & Pipkin No. 1 Blade, sec. 103, Blk. D, J. H. Gibson Sur. Loc.

Yoakum County

American Liberty Oil Co. No. 1 A. C Thomas, 2,227 ft. S and 440 ft. W, sec. 864, Blk. D. Drlg. 5,026 ft.
J. W. Murchison et al No. 1 Sawyer. SE¼, sec. 702, Blk. D. Drlg. 4,100 ft.
Shell Pet. Corp. No. 1 Baumgart, J. H. Gibson Sur. W.O.C. 4,875 ft.
Skelly and Sun Oil Co. No. 1 Kiser, sec 640, Blk. D. P.B. 5,256 ft.; tstg.
Standard of Texas No. 1 M. B. Sawyer, sec. 576, Blk. D, J. H. Gibson Sur. T.D. 5,403 ft.; P.B. 5,263 ft.; tstg.
Texas Co. No. 1 Walker, sec. 794, Blk. D El. 3,656 ft.; T.D. 5,180 ft.; P.B. 5,162 ft.; R.U. pump.
Stogner & Pipkin No. 1 Blade, J. H. Gibson Sur. Drlg. 4,520 ft.
P. N. Wiggins et al No. 1 Bartlett, sec 350, Blk. D. Drlg. 5,330 ft.

E. C. TEXAS WILDCATS

Anderson County

Humble O. & R. Co. No. 1-C Southern Pine Lbr. Co. Cg. 8,780 ft.
H. L. Parsons No. 1 H. B. Hemby, 7 mi. NE of Navarro. Drlg. 4,760 ft.

Angelina County

J. C. Bonham No. 1 Cameron Lbr. Co. E. Miller Sur., 3 mi. SE of Zavalla. 10-in. csg. set 195 ft.; W.O.C.
C. E. Parrott No. 1 J. C. Burres, W. Pluckler Sur., 2½ mi. W of Huntington. Drk.

Bowie County

Ferguson-Hill No. 1 Breckenridge. S.D. 2,950 ft.
King Oil Corp. No. 1 W. W. Ames, 800 ft. S and 1,650 ft. E of J. A. Tolbott Sur., 4½ mi. NW of Texarkana. Drk.

Cherokee County

Merica Oil Co. No. 1 Cherokee Dev. Co., A. J. Acker Sur., 2 mi. E of Maydelle. Drk.

Falls County

McCleod et al No. 1 F. Bolton, J. R. Cockrill Sur., 4 mi. NW Rosebud. Fsg. 1,708 ft.

Freestone County

C. E. Rossiter No. 1 J. P. Fulton in J. P. Fulton Sur., 2½ mi. E of Donie. S.D. 956 ft.

Grayson County

Denver Prod. & Ref. Co. No. 1 E. B. Moore, E. Barnes Sur., ½ mi. NW of Whitesboro. Drlg. 200 ft.

Gregg County

Humble O. & R. Co. & Gulf O. Corp. No. 1 E. Robertson, M. Mann Sur., 2½ mi. SW of Longview Trinity test. El. 272 ft.; coring at 7,491 ft.

Henderson County

Tide Water Assoc. et al No. 2-C McElreath & Suggett, W. P. Wyche Sur. T.D. 9,320 ft.; P.B. 8,890 ft.; tstg. gas T.D. 9,320 ft.; P.B. to 8,038 ft.; P.C. 7,910-50 ft.; flw. ½-in. T.C. 13 bbls. dist. per hr.; 8,000,000 ft. gas; T.P. 1,850 lbs.; C.P. 2,500 lbs.

Hill County

J. Willis No. 1 W. P. Ball, S. Marshall Sur., 3 mi. NW of Covington. M.I.M.

Hopkins County

Abbott & Ruthland No. 1 Peyton, J. Burkham Sur., 2½ mi. N of Sulphur Bluff. S.D.W.O.; T.D. 4,300 ft.

Lamar County

Cooper Bros. No. 2 L. B. Hayes, L. Roberts Sur. Loc.

Limestone County

C. L. Brown No. 27 N. B. Boyd, R. B Longbotham Sur., 3 mi. S of Wortham. T.D. 1,402 ft.; oil sd.; S.D.W.O. 1,455 ft.
Pure Oil Co. No. 16-T Kendrick, P. Varella Sur., Mexia field. T.D. 8,847 ft.; D.S. stuck.
Stanolind O. & G. Co. No. 1 T. Norris, in Thresher Sur., 5 mi. N of Kosse; 6,500-ft. test; elev. 528 ft.; drlg. 6,878 ft.

Navarro County

Mrs. Jane Robinson No. 1 Fortson Bros., Eli Smith Sur., 5 mi. NE Corsicana. Drlg. 1,870 ft.
T. Sharpe et al No. 1 E. B. McDowell, T Jordan Sur., 1½ mi. S of Bassets. S.D. 2,970 ft.

Rusk County

J. W. Shipman et al No. 1 Citizens Bank, J. J. Y'Barbo Sur., 4 mi. NE of Henderson. T.D. 4,500 ft.; D.&A.

Trinity County

Bilinoski et al No. 1 Trinity State Bnk., B. F. Wright Sur., 2 mi. S of Trinity. Drk.

Upshur County

L. & G. Oil Co. No. 1 H. Williams, Roeder Sur., 2 mi. NW of Gracetown. R.U.

RANGER (CENTRAL TEXAS) DISTRICT

Brown County

C. R. Cox, Tr., No. 1 Jan Lee, sec. 11, B.B.B.&C. Sur., NE cor. county. S.D. 240 ft.
H. P. Evans No. 1 J. T. Hall, 2 mi. N of Bangs, 220 ft. from N line and 11,008 ft. from W line of SW¼ sec. 25, H.T. &B.R.R. Sur. Drlg. 425 ft.
Guyie Greynolds No. 4 A. Leatherwood, 5 mi. E of Cross Cut, 650 ft. from N line and 200 ft. from W line of E½ Blk. 11, Juan Dalgado Sur. S.D. 1,095 ft.
R. B. Irving et al No. 1 T. C. Giddings, 390 ft. from S line and 3,382 ft. from W line of J. J. Cleiland Sur., 1 mi. E Thrifty. Correct owner was Irving & Prairie Oil Co. Loc. 1,500-ft. test.
S. B. Roberts No. 1 Angell, 9 mi. SE Cross Cut, B. H. Garvin Sur. Drlg. 1,750 ft.
Ungren & Frazier and Paul Pitzer No. 1 Cox & McInnis, sec. 88, I. S. Tabor Sur. (map shows H.T.&B. Sur.). Drlg. 1,975 ft.

Callahan County

Dudley Dev. Co. No. 1 Smith Hrs., 7 mi. NW of Oplin, 1,080 ft. from S line and 620 ft. from W line of W½ of SW¼ sec. 4, S.P.R.R. Sur., Blk. 1, Loc.; 2,200-ft. test.
R. F. Gilman et al No. 1 W. A. Young, 5 mi. NW Clyde, sec. 37, B.B.B.&C. Sur. Drlg. 1,600 ft.
Hal Hughes No. 1 Poindexter, sec. 350, Geo. Hancock Sur., 2 mi. NE of Oplin. T.D. 3,175 ft.; S.D.
J. C. Jackson et al No. 1 Thompson, 2 mi. S Eula, sec. 30, B.B.B.&C. Sur. Drlg. 1,510 ft.
Phillips Pet. Co. No. 1 Cozart, 1 mi. NW Scranton, M. Cherry Sur. Drlg. 2,560 ft.
R. F. St. John No. 1 A. E. Dyer, 4 mi. NW of Clyde, 1,385 ft. from E line and 1,323 ft. from S line of sec. 40, B.B.B. &C. Sur. Drlg. 990 ft.
Walker & Webb No. 1 Ross, 1 mi. NE Clyde, sec. 81, B.B.B.&C. Sur. Drlg. 1,550 ft.
Woodley Pet. Co. No. 1 Flores-Deep, 5 mi. SE of Baird, sec. 149, B.B.B.&C. Sur. Drlg. 3,700 ft.

Coleman County

J. F. Brock No. 1 J. H. Livingston, SE cor. SW¼ county, J. D. Waters Sur. No. 208. Drlg. 450 ft.
Dixie O.&G. Co. No. 1 Reaves, 6 mi. NW of Bangs, J. M. Rhine Sur. No. 629, S.D. 1,250 ft.
Walter L. Goldston No. 1 Conneley, 3 mi. NE of Santa Anna, 330 ft. from N and W lines of 30-ac. farm in H. Cochran Sur. S.D. 1,250 ft.
McDonald & Campbell & Cunningham No. 1 R. M. Lowe, SE of NE¼ county, 1,200 ft. from N line and 450 ft. from W line of J. C. Hunter Sur. M.I.M.; 1,350-ft. test; spd. and S.D.

Comanche County

N. D. Gallagher et al No. 1 Mrs. B. I. Terry, Desdemona pool, N. H. Kuykendall Sur. Drlg. 4,480 ft.
Dobbs Oil Co. No. 1 Hodges, sec. 11, Blk. 2, H.&T.C. Sur. S.D. 2,300 ft.

Eastland County

G. D. Chastain et al No. 1 Weddington, 4 mi. N. Cisco, sec. 496, S.P.R.R. Sur. L. 3,315-30 ft.; est. 40 bbls.; drlg. 3,385 ft.
Hickok Prod. & Dev. Co. No. 1 J. E. Donovan, 5 mi. NW of Cisco, 660 ft. from N and E lines of NW¼ sec. 489, S.P. R.R. Sur. Drlg. 1,100 ft.
J. D. Kittrell No. 1 Reynolds, 5 mi. E of Carbon, sec. 23, H.&T.C. Sur., Blk. 1, S.D. 1,000 ft.
Lone Star Gas Co. No. 1 M. Thomas, 5 mi. NW of Cisco, 668 ft. from N line and 660 ft. from E line of SE¼ sec. 478, S.P.R.R. Sur. R.U.
Monark O. & G. Co. No. 1 Downtain, sec. 14 H.&T.C. Sur. Blk. 4, 3 mi. N Eastland. Drlg. 2,175 ft.
J. R. Nichols et al No. 1 R. W. Murray Hrs., 3½ mi. SE of Carbon, 330 ft. from N and W lines of SW¼ sec. 4, H.&T.C. Sur., Blk. 2. Loc. 2,100 ft.

Erath County

Arnold Oil Co. No. 1 McMillan, 2 mi. SE of Desdemona, T. H. Dixon Sur., Abst. 1,103. S.D. 3,085 ft.
J. Hickey et al No. 1 Smith, 5 mi. SE Desdemona, J. B. Smith Sur. Shot with 165 qts. 2,906-3,065 ft. in sd.; S.D.

Jones County

E. P. Campbell et al No. 1 L. H. Lee, 5 mi. S Hawley, sec. 16, T.&P. Sur., Blk. 16. Drlg. 2,250 ft.
Fain & McGaha Oil Corp. No. 1 Mrs. L. E. Williams, 3½ mi. SW Nugent, 220 ft. from S & W lines of NE¼ of Sec. 37, T.&P. Sur., Blk. 15. Drlg. 1,570 ft.
Felmont & Adams No. 1 Woodson, 1½ mi. SE Avoca, sec. 200, B.B.B.&C. Sur. 311. Drlg. 2,300 ft.
Grisham & Hunter No. 1 E. D. Appling, NW¼ county, 1,208 ft. from S line and 1,450 ft. from W line of SW¼ sec. 32, B.B.B.&C. Sur. S.D. 1,860 ft.
Gwynn & Overby et al No. 1 Mrs. W. D. Baker, 4½ mi. SE of Anson, 220 ft. from N and W lines of S½ of SE¼, sec. 36, O.A.L. Sur. Drlg. 500 ft.
Mack Hayes and Montour Oil Co. No. 1 Chittenden, 7 mi. SE Hamlin, Subd. 18, McMullen & McGloin Sur. 337. Drlg. 2,185 ft.
W. L. Herring No. 1 J. S. Dodge, 1½ mi. SW of Hawley, 2,450 ft. W and 1,320 ft. N of most southerly SE cor. of sec. 5, T.&P. Sur., Blk. 16. Drlg. 950 ft.
T. D. Humphrey No. 1 Fielder, 2½ mi. E Anson, sec. 34, O.A.L. Sur. Drlg. 940 ft.
A. P. Kouri No. 1 J. C. Fielder et al, 5 mi. NW Nugent, 220 ft. from S and E lines of 80-ac. lse., sec. 2, T.&N.O. Sur., Blk. 2. Drlg. 2,000 ft.
Bells Wells Oil Co. No. 1 M. Caton. S.D.
Oil States Expl. Co. No. 1 Olson, 4 mi. N Avoca, sec. 182, B.B.B.&C. Sur. S.D. 2,265 ft.
Owen M. Murray et al No. 1 Rial, 2 mi. E Avoca, sec. 198, B.B.B.&C. Sur. L. 3,329-31 ft.; ¼ bbl. free oil per hr.; S.D.
Pet. Producers No. 1 J. S. Millsap et al, 3½ mi. SW Nugent, 220 ft. from S and E lines of NW¼ sec. 37, T.&P. Sur., Blk. 15. Sd. 1,927-44 ft.; shot 40 qts.; C.O.
Riddle et al No. 1 J. D. Freeman, 8 mi. SW Anson, sec. 6, T.&P. Sur., Blk. 17. S.D.
Roeser & Pendleton No. 1 fee, 2 mi. NW of Nugent, 2,800 ft. from N line and 3,240 ft. from W line of sec. 4, T.&P. Sur., Blk. 15. Drlg. 2,700 ft.
Shaheen Oil Co. et al No. 1 Jenson, 2 mi.

E of Avoca, sec. 198, B.B.B.&C. Sur. Drlg. 2,700 ft.

Dale Smith & Bert Fields No. 1 C. L. Carter, 3 mi. SW of Nugent, 220 ft. from N and W lines of SE¼ of SE¼ sec. 37, T.&P. Sur., Blk. 15. Drlg. 1,300 ft.

Stanton & Miller No. 1 Gaither, 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. S.D.

L. R. Terry et al No. 1 J. O. Bartlett, SE cor. county, 150 ft. from S and E lines of 40-ac. tr. in B.A.L. Sur., sec. 9. Drlg. 500 ft.

Ungren & Frazier No. 1 Manley Heirs, SE cor. of county, 660 ft. from N and W lines of sec. 44, T.&P. Sur., Blk. 14. Drlg. 2,150 ft.

C. E. Waite, Trust, No. 1 Ray, 3½ mi. SE of Stamford, sec. 7, D.&D.A. Sur. Drlg. 3,000 ft.

Mills County

Balyaet & Boyd No. 1 Westbrook, 7 mi. W of Goldthwaite, 4,950 ft. from S line and 4,290 ft. from W line of Caldwell Co. Sch. Ld. Sur. S.D. 650 ft.

Nolan County

Marland Drake No. 1 E. H. Woods, 6 mi. SW of Sweetwater, 1,320 ft. from S and W lines of sec. 65, T.&P. Sur., Blk. 21. Loc.

Palo Pinto County

Brazos River Gas Co. No. 5 M. B. Costello B, 1½ mi. N Pickwick, 1,397 ft. from N line and 150 ft. from W line of survey (W line being river bank), 660 ft. SW No. 4, R. R. Williams Sur. Drlg. 1,450 ft.

W. H. Clement No. 1 Federal Life Ins. Co., 2 mi. W Mineral Wells, sec. 51, T.&P. Sur., Blk. A (E of B). Drlg. 1,450 ft.

Bill Cole et al No. 1 J. W. Harris Est., NW cor. county, De La Garza Sur. Drlg. 850 ft.

W. K. Gordon et al No. 1 Johnson, 5 mi. N Gordon, John Bird Sur. Drlg. 3,225 ft.

Henry Hobbs et al No. 1 Bessie Holt, 4 mi. S. Graford, sec. 1,783, T.E.&L. Sur. S.D. 200 ft.

King Oil Co. No. 1 S. F. Lee, 4 mi. NW Graford, 933 ft. from N and W lines of sec. 1744, T.E.&L. Sur. S.D. 1,700 ft.

Ernest Lloyd et al No. 1 McClure, 3 mi. NE Graford, sec. 2,004, T.E.&L. Sur. S.D. 1,200 for csg.

Shackelford County

J. F. Baker No. 1 Merrick Davis, NE cor. of S½ of county, 330 ft. from N and W lines of sec. 21, T.&P. Sur., Blk. 13. S.D. 1,890 ft.

Joe DeGrazier No. 1 Harbough, E cen. part of county, sec. 1,563, T.E.&L. Sur. 4,500-ft. test; drlg. 250 ft.

Forest Dev. Corp. No. 1 T. G. Hindrick, NW cor. of county, 2,600 ft. from N line and 4,300 ft. from W line of sec. 1, A.B.&M. Sur. Drlg. 1,300 ft.

T. D. Humphrey No. 1 Alston, NE cor. county, sec. 16, H.&T.C. Sur., Blk. 3. Drlg. 1,365 ft.

C. J. Kleiner et al No. 1 Morris, 2 mi. NE Bluff Creek pool, sec. 187, E.T.R.R. Sur. Drlg. 1,950 ft.

Mesa Verde Oil Co. No. 1 Hennessey, 7 mi. E of SW cor. county, sec. 87, T.&P. Sur., Blk. 13. S.D. 1,600 ft.

Owens-Snebold Oil Corp. No. 1 Haterius, sec. 163, B.B.B.&C. Sur. L. 3,190-91 ft.; S.O.; cmtg.; will tube and treat.

Stephens County

Danciger Oil Ref. Co. No. 1 Mrs. Aileen Copeland, 8 mi. SE Ivan, 1,196 ft. from E line and 350 ft. from S line of sec. 1, M.E.P.&P. Sur. Drlg. 900 ft.

Graham, Hafner, Lane & Inman No. 1 J. N. Yocum, 5 mi. SE of Frankell, 250 ft. from N and E lines of farm or approx. 2,525 ft. from E line and 1,400 ft. from S line of John R. Carter Sur. Drlg. 250 ft.

I. C. Little No. 1 R. M. Rogers, NE¼ of county, 150 ft. from E line and 1,980 ft. from S line of sec. 28, T.&P. Sur., Blk. 5. Drlg. 300 ft.

G. Willard Rich No. 1 M. M. Andrews, SW cor. county, 450 ft. from S line and 300 ft. from W line of N½ sec. 39, T. &P. Sur., Blk. 7. Loc.; 4,500-ft. test.

Tarrant County

E. E. Hoffpauir et al No. 2 W. H. Davis, 2 mi. S Arlington, H. Blackwell Sur. S.D.O. 2,140 ft.

Taylor County

Bert Fields et al No. 1 Sears, sec. 223, Blk. 64, H.&T.C. Sur. Drlg. 1,500 ft.

Dale H. Dorn No. 1 Hopkins, 1 mi. NW View, Subd. 20, sec. 120, Guadalupe Co. Sch. Ld. Sur. Drlg. 3,333 ft.

A. Findley No. 1 Bowles Est., NE cor. county, sec. 26, B.A.L. Sur. Drlg. 2,000 ft.

Wichita Prod. Co. No. 1 E. Lincicum, NE cor. of county, 990 ft. from N line and 1,195 ft. from E line of NW¼ sec. 21, B.A.L. Sur. S.D. 685 ft.

Throckmorton County

Morris & Spoonts No. 1 Alden Bros., NW cor county, 1,350 ft. from E line and 5,210 ft. from S line of Raymond Sanches Sur. A-248. Loc.

Henry Zwelfel No. 1 J. H. Lee, 4 mi. NE of Woodson, 930 ft. from E line and 2,011 ft. from S line of J. A. George Sur. Loc.

Wise County

Latex Oil Co. No. 1 Smith, 3 mi. E of Bridgeport, Jas. Couch Sur. T.D. 4,075 ft.; P.B. to 3,910 ft.; drlg. plug.

NORTH TEXAS WILDCATS

Archer County

A. P. Lieser No. 1 W. E. Brown, sec. 2,421, T.E.&L. Sur. S.S.O. 1,411-14 ft.; tstg.

E. C. Norwood et al No. 1 W. P. Ferguson, sec. 4, F. Peterswick Sur. A-343. 6⅝-in. 3,811 ft.; W.O.C.

Baylor County

H. J. Baker No. 1 J. R. Martin, sec. 233, T.&N.O. Sur. Drlg. 1,800 ft.; S.D.O.

Clay County

Healdton O. & G. Co. No. 1 Wallace, Belcher Subd. Drlg. 2,330 ft.

Cooke County

Byars & Nenny No. 1 W. A. Scroggins, S. P. Yearwood Sur. A-1,554. Spd.

W. O. Russell No. 1 Bundy P. Cady. Sur. Testing S.S.O. 2,164-68 ft.

W. O. Russell No. 1 J. W. Sherrill, Wm. Phelps Sur. A-821. Drlg. 1,810 ft.

Whitfield, Pearson & Grimes No. 1 W. G. Dozier. R.U.R. and S.D.

Denton County

W. C. Curry et al No. 1 G. F. Owens, N. Rudder Sur. A-1,060. Show gas 1,235-50 ft.

Bruce Lee No. 1 Boyles, S. Ross Sur. A-112. Drlg. 1,880 ft.

Wells-Dodson-Pearson No. 1 Hughes, B.B.B.&C. Sur. A-1252. S.D.O. 2,200 ft.

Foard County

O. P. Burnham No. 1 T. L. Ward, sec. 21, H.&T.C. Sur. S.D.O. 2,361 ft.

Texas Co. No. 14 Johnson, sec. 37, S.P. R.R. Sur., Blk. L. Drlg. 3,580 ft.

Grayson County

Denver P. & R. Co. No. 1 E. B. Moore, E. Barnes Sur. A-43. Drlg. 175 ft.

Pearson Tubing Co. No. 1 J. H. Thompson, W. A. Warner Sur. A-1350. Drlg. 3,100 ft.

Jack County

J. B. Burris No. 1 W. J. Eatherly, John Helmstutler Sur. A-1,267. Drlg. 2,550 ft.

Hamilton Pet. Co. No. 1 Johnson Brothers, Spottswood Sur. A-531. Drlg. 3,300 ft.

Hammon, W. H., No. 2 George E. Evett, sec. 2, W.C.R.R. Sur. Drlg. 3,000 ft.

Hanlon-Buchanan, Inc., No. 1 Ed M. Myers, N. F. Rudmose Sur. A-1,803. Cg. O.S. 2,711-17 ft.; show oil.

Hanlon-Buchanan, Inc., No. 1-A E. R. and W. Worthington, S.A.&M.G. Sur. A-589. 6⅝-in. 2,350 ft.; O.S. 2,360-70 ft.; balling. 6 bbls. per hour; P.O.P.

L. C. Harrison No. 1 L. S. Wright et al, Z. S. Brooks Sur. A-64. Drlg. 2,350 ft.

Nelson Oil Synd. No. 1 J. E. Henderson A, T. J. Walden Sur. A-914. 6⅝-in. 2,738 ft.; W.O.C.

O. J. Perrin No. 1 J. S. Rhodes, J. W. Coates Sur. A-1,240. Loc.

Taubert & McKee No. 1 R. H. Eatherly, J. H. Henderson Sur. A-1,749. Spud. and S.D.

Van Eman & Richards No. 1 Whitsell, Wm. McElroy Sur. A-559. Drlg. 1,200 ft.

Montague County

J. W. Sorrell et al No. 1 J. E. Walthall Sam H. Smith Sur. A-662. Drlg. 2,500 ft.

Wichita County

Burk Royalty Co. No. 1 W. L. Hodges, Lot 8, H.T.&B. Sur. A-139. 6⅝-in. 3,753 ft.; W.O.C.

Consolidated Oil Co. No. 1 W. P. Ferguson, William Spillers Sur. A-257. O.S. 3,704-11 ft.; rng. pipe to test.

W. E. Hammon No. 1 Mrs. H. Lalk, Blk. 284, W.C.S. Sur. Drlg. 920 ft.

King Oil Co. No. 1 J. L. and T. J. Waggoner, Blk. 8, M. A. Willis Sur. Drlg 3,200 ft.

Melat & Graham No. 1 J. and J. Waggoner, W. R. Eaves Sur. A-753. Tstg. B.O.S. and lime 3,806-3,900 ft.

Felix Payne No. 1 P. R. Pace, R. J. Scott Sur. A-253. Spud. & S.D.

Staley Oil Co. No. 1 First National Co., Blk. 44, K.W.V.F.I. Sur. Shot L. and O.S. 3,817-77 ft.; 480 qts.

E. J. Stump No. 1 M. P. Bishop, L. Netherley Sur. A-240. S.L. 3,885-86 ft.; rng. 6⅝-in.

Clyde Texan Oil Fields Co. No. 1 A. W. Burnside, John M. Sharp Sur. A-262 Shot S.L. 3,935-51 ft.; tstg.; W.O. R.R Com. test.

Wilbarger County

Barry & Hayes No. 1 McGill, sec. 3, Blk 9, H.&T.C. Sur. S.D. 3,030 ft.

W. Little No. 1 A. P. Morris, sec. 3, H.T. &C. Sur., Blk. 14. Drlg. 1,325 ft.

Phillips Pet. Co. No. 1 W. T. Waggoner "Barger," sec. 11, H.&T.C. Sur., Blk. 14. Drlg. 2,100 ft.

W. W. Woolsey et al No. 1 Waggoner A, sec. 3, S.P.R.R. Sur. A-535. Drlg. 1,475 ft.

Wise County

Latex Oil Co. No. 1 C. R. Smith, J. Couch Sur. A-104. C.O. bridge; tstg.

Young County

Anzac Oil Corp. No. 1 E. S. Graham, A Hines Sur. A-135. Drlg. 2,930 ft.; tstg.

Beavers, C. E., et al No. 1 Cooper, sec. 81, T.E.&L. Sur. 6⅝-in. 1,185 ft.; O.S. 1,185-87 ft.; flowing.

C. B. Christie No. 1 S. Dozier, I. L. Hill Sur. A-126. 5⅞-in. 3,780 ft.; W.O.C.

Collier & Conner No. 1 H. M. Ford, W. T Carter Sur. A-62. Drlg. 2,650 ft.

N. B. Crenshaw No. 1 J. C. Dwight, sec. 1,444, T.E.&L. Sur. Material on ground.

L. A. Long No. 1 F. A. Burnett, E. G. Rector Sur. No. A-239. R.U.C.T.

Rocky Mountain Runs

Production estimates for week ended December 11, 1937:

WYOMING	
Salt Creek	16,360
Big Muddy	1,220
Badger Basin	250
Black Mountain	190
Byron	70
Dallas Perby	560
Dutton Creek	60
Elk Basin	110
Frannie	1,520
Garland	2,720
Grass Creek	1,480
Hiddon dome	320
Hudson	320
LaBarge	860
Lance Creek	10,330
Lost Soldier	1,280
Medicine Bow	5,190
Midway	60
Oregon Basin	3,970
Osage	760
Pilot Butte	20
Quealy dome	720
Rock River	3,090
South Casper	510
Poison Spider	330
Teapot	20
Wertz	330
Waugh dome	40
Total Wyoming	52,690
MONTANA	
Border	100
Cat Creek	570
Cut Bank	8,120
Dry Creek	750
Kevin-Sunburst	4,990
Pondera	1,280
Total Montana	15,810
COLORADO	
Florence	150
Fort Collins and Wellington	200
Iles dome	2,530
Moffat	350
Orchard	30
Rangely	80
Tow Creek	160
Price	620
Total Colorado	4,120
NEW MEXICO	
Cooper	5,380
Eaves	1,060
Eunice	28,210
Hardy	1,480
Hobbs	16,540
Jal	1,250
Langlie	2,880
Lynch	680
Lynn	560
Mattix	2,470
Monument	30,040
North Lynch	60
Penrose	4,450
Rhoades	130
Skelly	1,840
South Eunice	2,370
Vacuum	150
Artesia-Maljamar	6,820
Getty	200
Hogback	200
Rattlesnake	810
Table Mesa	90
Total New Mexico	107,670
Total Rocky Mountain region	180,290

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Orcutt*
14-14.9	$ .80	$ .79	$ .74	$ .78	$ .79	$ .80	$ .76	....	....	....	$ .80	$ .76	$ .76	$ .77	$ .78	....	....	$ .70	$ .70	$ .70	....	....	$ .70	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	$ .70
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	....	.82	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	....	.85	.76	.78	.77	.78	....	.70	.74	.74	.71	$ .70	....	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	....	.88	.78	.82	.77	.80	....	.70	.78	.78	.72	.70	....	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	....	.91	.80	.85	.77	.84	$ .78	.73	.82	.82	.74	.70	....	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	....	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	....	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$ .84	$ .79	....	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	....	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	....	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	....	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	....	1.02	.95	....	.89	.99	.86	.88	1.01	.98	.90	.83	....	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	....	1.05	.98	....	.92	1.03	.90	.91	1.06	1.02	....	....	....	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	....	1.02	....	.96	1.06	.95	.95	1.10	1.06	....	....	....	.95	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	....	1.06	....	.99	1.10	.99	.99	1.15	1.10	....	....	....	.97	....
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	....	....	1.09	....	1.03	1.14	1.03	1.02	1.20	1.14	....	....	....	.99	....
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	....	....	....	1.07	1.17	1.08	1.06	1.25	1.18	....	....	....	1.01	....
31-31.9	....	....	....	....	1.24	Pipe	1.24	1.22	97	Ship	....	....	....	1.11	1.21	1.12	1.09	1.29	....	....	....	....	....	....
32-32.9	....	....	....	....	1.27	Line	1.27	1.27	1.00	....	....	....	....	1.14	1.25	1.16	1.13	1.34	....	....	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.28	....	....	....	1.18	1.28	1.20	1.17	1.38	....	....	....	$1.19	....	....
34-34.9	....	....	....	....	....	....	....	1.37	....	1.32	....	....	....	1.22	1.32	1.25	1.20	....	....	....	....	1.23	....	....
35-35.9	....	....	....	....	....	....	....	1.42	....	1.35	....	....	....	1.25	....	1.29	....	....	....	....	....	1.27	....	....
36-36.9	....	....	....	....	....	....	....	1.46	....	1.39	....	....	....	1.29	....	1.33	....	....	....	....	....	1.31	....	....
37-37.9	....	....	....	....	....	....	....	1.51	....	1.43	....	....	....	1.32	....	1.37	....	....	....	....	....	1.35	....	....
38-38.9	....	....	....	....	....	....	....	1.56	....	....	....	....	....	1.36	....	1.42	....	....	....	....	....	1.39	....	....
39-39.9	....	....	....	....	....	....	....	1.61	....	....	....	....	....	1.40	....	....	....	....	....	....	....	1.43	....	....
40-40.9	....	....	....	....	....	....	....	1.66	....	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

PERSONAL

HINES BAKER and DAVE FRAME, directors of the Humble Oil & Refining Company, Houston, Tex., were business visitors last week in the New York offices of the Standard Oil Company of New Jersey.

DR. BYRON B. BOATRIGHT, formerly head of the petroleum engineering department, Colorado School of Mines, Golden, Colo., has joined the firm of Parker, Foran & Knode, of Austin, Corpus Christi, Houston and San Antonio, Tex.

E. J. SENNE, director of the fire and accident prevention department of the Socony-Vacuum Oil Company, was unable to deliver a scheduled talk before the fire and safety marshals of the National Petroleum Association in Oil City, Pa., December 8, on account of illness.

D. W. HOVERY, vice president of the Republic Oil & Refining Company, Houston, Tex., went to Corpus Christi, Tex., to look over the proposed site for a plant of the Duval Gasoline Company (a subsidiary) to be constructed in the North Sweden field.

CLYDE N. ROBINSON, Tulsa, vice president of the Public Service Company of Oklahoma, was named president of the Petroleum Electric Power Club at its annual meeting in Shreveport, La. O. W. JONES, Corpus Christi, Texas, is the new vice president, and HARRY E. ROBERTS, Joplin, Mo., secretary-treasurer. GEORGE WECKEL, Wichita, Kan., is a new director, and these members of the board were reelected: H. STUEVE, Oklahoma City; F. A. GRAHAM, Kansas City, Mo.; J. E. ELLIOTT, Shreveport, and L. A. ARMSTRONG, Chicago.

P. S. HAURY, petroleum engineer and geologist, whose office formerly was in the Wilson Building, Dallas, Tex., is established in his new business home, 707 Santa Fe Building, that city.

DR. JAMES H. GARDNER, president of the Gardner Petroleum Company, Tulsa, was chosen president of the Oklahoma State Archeological Society last Saturday. Doctor Gardner has long been an active figure in archeology of the Southwest and was among backers for exploration of the Spiro treasure mound which drew wide attention.

J. W. TRENCHARD of Cambridge, Neb., was elected president of the Nebraska Petroleum Marketers, Inc., at the annual convention last week. He succeeds THOMAS H. MURPHY. Other officers include PAUL H. ENGLER and F. K. RICHARDSON, vice presidents; TOM LAMBERT, S. E. TORGESON and JOE GANGEL, directors. Mr. Trenchard was instructed to work with the Nebraska congressional delegation for repeal of the federal gasoline and lubricating oil taxes.

PRENTICE HILL, independent operator of Houston, Tex., is on a two weeks' hunting trip in Mexico.

OSCAR SLATON, petroleum engineer for the Texas Railroad Commission, with headquarters in Lubbock, Tex., has been transferred to the Gulf Coast district with an office in Houston.

A. R. LANGE has been made general manager of the Sulflo Corporation of America, Elizabeth, N. J. He was formerly technical director of the Swan-Finch Oil Corporation, New York.

W. T. DINKINS, vice president of the Richfield Oil Corporation, was elected a director last week. CLEVE B. BONNER was elected secretary and LEONARD SWITZER assistant secretary.

J. E. BRANTLY, president of the Drilling and Exploration Company, left his office in Los Angeles last week to visit his drilling wells in Texas and superintend work on his citrus grove in Florida. He will return to California in January.

RALPH C. CHAMPLIN has been elected a vice president of the Ethyl Export Corporation, foreign subsidiary of the Ethyl Gasoline Corporation. Since joining the Ethyl organization early in 1937 Mr. Champlin has been chairman of its coordinating committee.

RICHARD C. McCURDY, chief petroleum engineer for the Shell Oil Company, has left his Los Angeles office to take over the duties of ALBERT F. BAPTIE, petroleum engineer for the San Joaquin Valley, while Mr. Baptie is recovering from illness at a sanitarium in Pasadena, Calif.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

P. M. Shannon proposes to drill five tests for gas in the Jasper area, Walker County, Alabama. Mr. Shannon was a pioneer in the Wyoming field and has had large experience in Eastern fields.

Foster W. Mitchell, 85, died in Franklin, Pa., on December 15. He drilled the third producing well in the Titusville field following the Drake well completion in 1859, and was in the oil business and banking until he retired in 1894.

20 YEARS AGO

The state of Kentucky collects an inheritance tax of about $2,000,000 from the estate of the late Mrs. Robert Worth Bingham, formerly Mrs. Henry M. Flagler. The estate was valued at $80,000,000, mostly made in the oil business.

James Sheakley, retired pioneer Pennsylvania oil producer, and the first governor of Alaska, dies in Greenville, Pa., aged 88 years.

Mrs. Catherine Oxley Flanagan, wife of James P. Flanagan, prominent oil executive, was struck by an automobile and fatally injured in Houston, Tex., while crossing a street.

Gustav Egloff estimates the cracked gasoline marketed in 1913 at 1,000,000 barrels and in 1917, 7,000,000 barrels. Straightrun gasoline represents 87.98 per cent and cracked gasoline 12.02 per cent of the quantity marketed in 1917.

10 YEARS AGO

A Yates field, Texas, lease boss, accustomed to wells flowing at the rate of 1,000 to 10,000 barrels an hour, dolefully reports that "No. 3 on the X lease looks like a bust. She's good for only 75 barrels an hour at 1,340 feet."

The West Texas fields are producing 271,619 barrels, a new record for that area.

The Lovell field in Logan County is the deepest oil field in Oklahoma. The depth of the Wilcox pay is 5,800 feet.

D. A. LITTLE, president of the Magnolia Petroleum Company, Dallas, Tex., is on an eastern trip.

WILLIAM GARGAN, Hollywood actor, spent several days in Shreveport, La., recently. Mr. Gargan and RALPH BELLAMY have investments in the Lisbon oil field.

TERRY A. HORNADAY is resident manager and R. M. HENSON is auditor of the new general offices of the Trans-Pecos Pipe Line Company, recently transferred from Houston, Tex., to Artesia, N. M.

ALBERT WRIGHT, for more than 11 years with the Venezuela subsidiary of the Gulf Oil Corporation, has been appointed general superintendent of the Amiranian Oil Company. His office in New York will be at 39 Broadway.

R. H. TURNER, former consulting engineer, has become affiliated with the F. W. BURFORD interests. He will become plant superintendent of the new natural gasoline plant which Mr. Burford is completing in the Miller County, Arkansas, area of the Rodessa field.

FRANK CARTER, formerly in charge of the San Joaquin Valley division of the General Petroleum Corporation, has been transferred to the Los Angeles headquarters. DAVID GRIBBIN, formerly Mr. Carter's assistant, now is in charge of the Valley division.

H. M. NIELSEN, formerly of Sinton, Tex., is in charge of the Plymouth Oil Company's newly opened West Texas district office in Midland. He will be assisted by H. CORMAN, stationed in Midland several months, and LANDGON TENNIS, transferred from Sinton.

PARAGRAPHS

STARK FOX, Los Angeles magazine writer and oil man, has resigned the editorship of the California Oil World to become director of industry relations for the Oil Producers Agency of California. He succeeds RICHARD FENTON, who becomes assistant to RUSH M. BLODGET, executive vice president of the organization of independent oil operators. Mr. Fox, son of C. P. Fox, founder of the California Oil World, joined that publication immediately after graduating from Stanford University in 1929, serving as associate editor till January, 1937, when he became editor.

CHARLES P. HIRTH, of the Hughes Oil Company, was reelected president of the Chicago Oil Men's Club at its annual election held recently. Others chosen were: Vice president, H. GEORGE DONOVAN, Industrial Petroleum Corporation; treasurer, C. H. SAAS, Refiners Petroleum Company; secretary, W. G. FRANKE, American Mexican Petroleum Corporation; directors, F. E. MALONE, Shell Petroleum Corporation; J. G. PHINNEY, Cities Service Oil Company, and H. J. HOUGH, A. and A. Oil Company.

C. M. LARSON has been advanced from supervising engineer of the Sinclair Refining Company, New York, to chief consulting engineer.

JOHN McFADYEN, vice president of the Ohio Oil Company, has returned to Casper, Wyo., headquarters after a business trip to California.

A. O. PEGG, superintending engineer of the Union Oil Company in Los Angeles, has been reelected vice chairman of the Pacific Coast Marine section of the National Safety Council.

HARVEY LYTEL, who was superintendent of production for Socony-Vacuum Oil Company in Dusseldorf, Germany, has been transferred to Cairo, Egypt, where he will serve in a similar position.

BYRON RIFE, of the Southern Cross Oil Company, operating in Bastrop County, Texas, has been assigned to two weeks service in Washington, D. C., as a lieutenant colonel in the Officers Reserve Corps.

HENRY LANGSPECHT, formerly chief scout for the Shell Petroleum Corporation in Tulsa, but now an independent operator, and MISS CAROLINE HOPPING, Tulsa, were married recently and went to Mexico City for their honeymoon. They will return after the Christmas holidays.

A. J. HARDENORFF, former drilling contractor in the Salt Creek field, Wyoming, has purchased the Woodson Oil Company and all its holdings in the Hudson pool of the Lander field, Wyoming. The transaction involves some 830 acres of land and five producing wells. Mr. Hardenorff will do additional drilling and will operate as the Woodson Oil Company.

C. E. STURDEVANT, chairman, and RAY E. HULING, secretary of the Panhandle chapter of the American Petroleum Institute, both with Phillips Petroleum Company in Pampa, Tex., had charge of the chapter's annual banquet held in Pampa, December 10.

WALTER L. FAUST, since 1935 general manager of marine and aviation sales for the Socony-Vacuum Oil Company, Inc., has been appointed eastern sales manager in charge of operations in New England, New York, New Jersey and Pennsylvania. Mr. Faust, whose residence is in Summit, N. J., served as a first lieutenant in the Coast artillery during the World War. Then he resumed his course at Stevens Institute of Technology, graduating as a mechanical engineer in 1921. He joined the Vacuum Oil Company as domestic marine sales manager in 1929.

THOMAS A. O'DONNELL, former president of the California Petroleum Company and first president of the American Petroleum Institute, went into Los Angeles from Palm Springs last week to testify in a suit instituted by a group of French heirs against HERBERT FLEISHACKER. He greeted many of his friends who were present to hear him testify regarding conditions in the Lost Hills field 22 years ago.

DEXTER NORTH, chief of the chemical division of the U. S. Tariff Commission, has resigned to become associated with Arthur D. Little, Inc., Cambridge, Mass., as that organization's Washington technical representative. Mr. North will assemble technical, economic, and statistical information concerning the chemical and other process industries. He directed the commission's investigation into petroleum production costs.

So He Started Again

D. B. Collins, production manager for the Shell Petroleum Corporation and recently elected chairman of the Houston (Gulf Coast) chapter of the American Petroleum Institute, division of production, was already well on his way toward a successful career as an engineer in California when he decided to start over again by beginning at the bottom of the oil business. So he got a job as a roustabout with the Shell Oil Company. That was in 1923. The young man soon was working on rigs. Then he was shifted to engineering. He became a district engineer. And kept on going.

D. B. COLLINS

Grass Valley, in the mining country of California, was Mr. Collins' birthplace. The family moved to Berkeley, where the boy attended the public schools and then entered the University of California in that city. He majored in petroleum and mining engineering and expected to graduate in 1918; but the World War came, and in 1917 he enlisted for service and went oversea, with the result that it was 1920 before he got his diploma. His first position was with the late J. H. G. Wolf, consulting engineer. After that he was an engineer with Ford, Bacon & Davis for two years. Then he changed his plans and got the roustabout job.

Mr. Collins was a division superintendent for the Shell Oil Company in Ventura, Calif., when he was advanced to his present post in Houston in 1934. His territory includes Texas, Arkansas, Louisiana and New Mexico.

R. A. McGOEY, of the Union Oil Company of California, Los Angeles, was in Denver last week on company business.

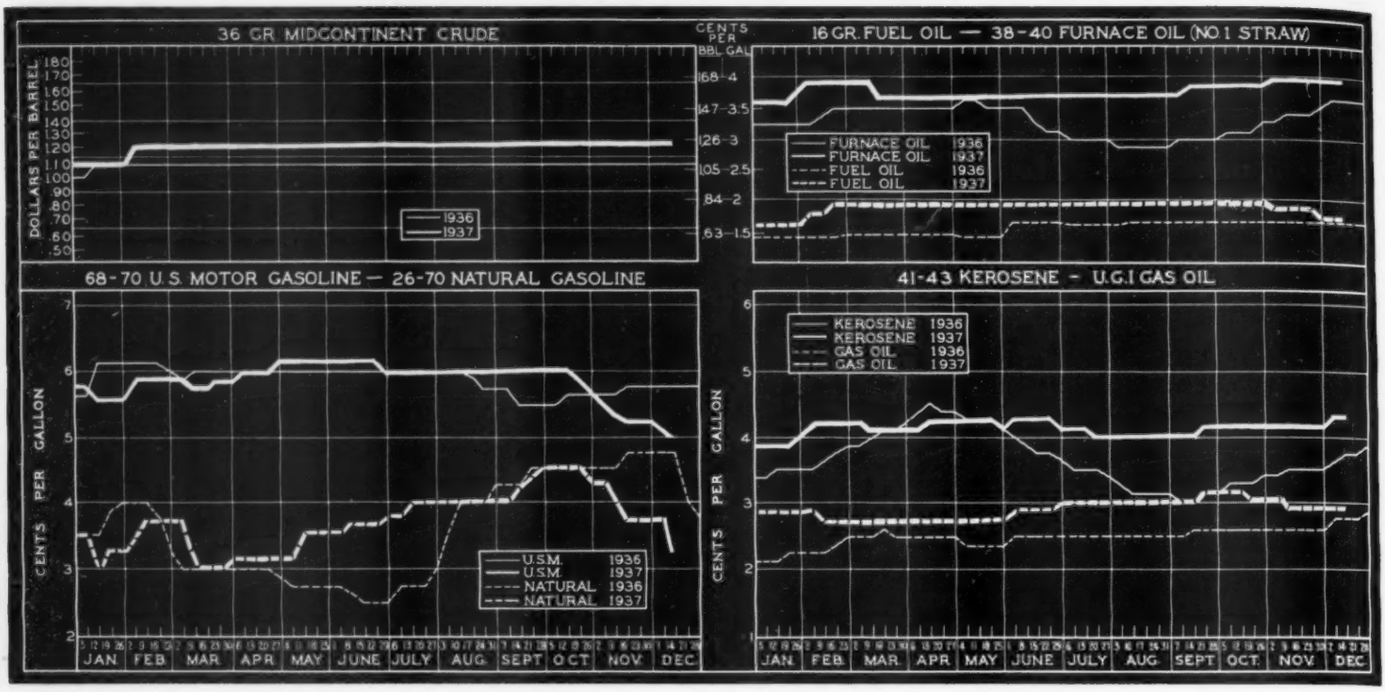
ALFRED FISHER, British shale oil and carbonization consultant, was in New York last week on the first stop of a month he will spend in this country investigating processes.

S. W. HARDISON, superintendent of the General Petroleum Corporation in Casper, Wyo., will spend the Christmas holidays in Los Angeles and visit the headquarters of his company.

LEE F. MINTER, petroleum engineer with the Belmont Quadrangle Drilling Company, has been transferred from the Shreveport, La., office to the Bradford, Pa., district. He will maintain headquarters in Wellsville, N. Y.

MELVILLE DOZIER, JR., a director of the Oil Producers Agency of California and president of the Texas Holding Company, has been appointed executive secretary of the California Safety Board, of which A. J. MARTINSON, of the Union Oil Company, is safety director.

J. P. MARKEY, resident chemist at the Denver, Colo., refinery of the Continental Oil Company, has been appointed superintendent of the Farmington, N. M., refinery, succeeding C. V. COULSON, resigned. E. A. MARKEY, resident chemist at Artesia, N. M., has been made resident chemist at Denver. GEORGE SMEE, maintenance engineer at Ponca City, Okla., has been promoted to resident engineer at Denver. J. R. BAILEY, power department foreman in Baltimore, Md., has been appointed night superintendent at the Glenrock, Wyo., refinery.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Weakened by Slack Gasoline Market

Naturals Drop in Group 3 District

By T. F. SMILEY

Pursuing the drooping trail of refinery gasoline in the Group 3 market, the naturals turned downward in the past week. Lubricants were heading the same way. Residual oils were stagnant. Motor fuel was becoming a more distracting problem, and nobody had the answer. Light burning oils were riding high.

It had come to be supposed gasoline prices could go no lower, but the higher-octane grades lost another eighth, thus adding to the loss which refiners are taking on every barrel of crude run.

There was a little comfort in reports that less cheap third-grade material was looking for outlets. Accumulations of this material in North and West Texas, with poor initial, gravity and octane rating, have been a weakening influence in the market recently. The huge additions to the nation's gasoline stocks in late weeks was a subject of discouraged comment. At the same time it was declared refiners were keeping their operations at just about the point necessary to meet the demand for burning oils.

Cheaper to Buy It

No important plant shutdowns were reported during the past week, notwithstanding the loss incurred by continued operation. There was a growing disposition among the larger refiners to make no third-grade gasoline and to buy it instead from small independents who have no ready outlets. The reason for this procedure is the simple one that it is cheaper to buy the material at present prices than it is to make it.

Natural gasoline was particularly affected by the weakness of the refinery product in the Gulf Coast area, where most of the tankcar shipments of natural from Texas, Oklahoma, Louisiana and Arkansas go. It was said the course of the natural market in the immediate future would be shaped largely by the refinery gasoline market at the Gulf.

Notwithstanding the drop in prices in both Texas and Oklahoma, the natural gasoline market was in a fairly satisfactory statistical position. No really burdensome inventories were reported at any point, and observers said the naturals would respond promptly to any upturn in the motor fuel market. Orders for several part cargoes will have to be filled in the next few weeks, and the buying for this purpose will help to reduce stocks that may be getting topheavy. It is recognized, however, that increased strength in the gasoline market will have to precede improvement in the naturals.

Refined Oil Market Barometer

The rate at which gasoline stocks are accumulating is creating fear that refiners may enter the heavy consuming season next spring under a handicap. Wintry weather is quickening the demand for heating oils. The lighter grades and kerosene are scarce. Heavy fuels feel the dullness in general business. Lubricants and natural gasoline off.

MID-CONTINENT. Gasoline weak. Heating oils buoyant. Natural gasoline and lubricants weak.

EAST COAST. Light fuel oils vigorous. Gasoline unsteady. Kerosene strong.

GULF COAST. Gasoline and lubes slow. Kerosene firm. Fuels and gas oil fairly tight.

CALIFORNIA. Kerosene firm. Rest of the market inactive and soft.

PENNSYLVANIA. Kerosene and fuel oils strong. Lubricants and gasoline soft.

CHICAGO. Gasoline weak. Heating oils vigorous. Low-grade fuels slow.

One Cheerful Spot

Kerosene and the furnace distillates provided a cheerful spot in the refinery market. Kerosene was becoming increasingly scarce. One sales manager, his own tanks empty, was trying to buy some 41-43 from other plants at 4 cents to take care of his own customers. "I've talked with a dozen refiners," he said, "and I haven't been able to find a gallon of kerosene of standard specifications at 4 cents. The only thing available at that price is untreated cracked material of bad odor. If I knew where I could buy 41-43 at 4 cents I'd grab 20 cars this minute." This sales manager was paying 4⅛ cents for kerosene to be resold at 4¼ cents.

No. 1 prime white was especially scarce in the furnace oil group, and only stray cars were said to be available at less than 4⅛ cents. The No. 2 dark was showing greater strength. The 40-42 tractor fuel, much used as a range oil, was in brisk demand. Consumer requirements of heating oils were quickened in the past week by wintry weather which swept wide areas. Jobbers who have been carrying limited stocks were ordering actively, with the injunction, "Rush shipment."

Seasonal falling off in demand, along with scattered underselling, brought about a 1-cent slash in the prices of bright stocks and some grades of steam-refined. The lubricant market had lacked stamina for weeks. Wax was slow, with no changes in price. Heavy fuels were dull.

Unprecedented Fuel Oil Demand on East Coast as Gasoline Declines

By H. STANLEY NORMAN

NEW YORK, Dec. 14.—Vigorous demand for fuel oil developed last week in the north Atlantic district, particularly in western and northern New York and in New England. Sub-freezing temperatures prevailed most of the week in the New York territory from Washington north as well as along the more southern portions of the Atlantic seaboard.

Distributors were pressed to meet the demand in the more seriously affected areas where heavy snowfall accompanied the sharp dip in temperatures. In Buffalo and surrounding vicinity the snowfall was the most serious in the history of weather statistics. Traffic was reduced to a minimum.

While the colder weather and snow precipitated an early winter demand for fuel oil without precedent in some points, it had the natural opposite influence on motor fuel consumption. The combination of excessive gasoline stocks on both the Atlantic and Gulf coasts and the cold weather in this major consuming area was inimical to the interest of motor fuel. Gulf Coast gasoline markets are lower on the average by probably an eighth to a quarter of a cent per gallon than at the turn of November. Inquiries from foreign purchasers coming into the export market are apparently being filled at concession prices. At least quotations at the late November market level have failed to attract business.

The cold weather did bring a reaction in the Gulf Coast kerosene and light fuel oil market, although sales at the low of the previous week's price range were reported. There is little doubt, however, in the minds of marketers that the light fuel oil and kerosene group will move forward rapidly if existing weather conditions continue for a few more days. The only deep concern expressed over light fuel oils at present is with regard to the industry's ability to meet the winter demand without stacking up unbearable gasoline stocks which could easily develop if the winter is so closed as to reduce automobile use materially below seasonal level.

The dealer tank-wagon quotation on gasoline in Philadelphia was lowered a half cent per gallon December 10 by Atlantic Refining Co. The recent cut followed a reduction of a quarter-cent per gallon in the latter part of November. Other marketers followed the lead, reducing the general structure. Pennsylvania gasoline consumption during the first nine months of 1937 totaled 1,056,572,682 gallons, an increase of 116,552,003 gallons over the same period in 1936, according to J. Griffith Boardman, secretary of revenue. During September alone, the state's gasoline consumption, based on taxes collected, totaled 130,193,901 gallons compared to 117,377,023 for the same month in 1936, an increase of 10.92 per cent. Unleaded gasoline succumbed to further pressure last week in the New York and New England districts. Prices were somewhat nominal for 65 octane, unleaded gasoline, although tankcar quotation of 7 cents per gallon in New York, Philadelphia and Boston was the most frequently reported. Barge deliveries were reported made at 6⅞ cents per gallon in a few instances. Most of the large suppliers, however, continue to quote 7¼ cents per gallon on 65 octane, unleaded motor fuel. There is general dissatisfaction over the volume of business, however, and another adjustment may result, some think, unless improvement is forthcoming. Dullness of the export market is contributing to the normal decline of consumption for this season.

Tank car prices for light fuel oil were firm to car prices for light fuel oil were firm to strong in the New York area at 5¼ cents per gallon. f. o. b. refinery and the tank wagon spread is from 7 to 7½ cents per gallon. The big improvement precipitated by temperature dips last week was confined to sharp increases in volume and in virtual complete elimination of tank wagon deliveries at less than the quoted market for spot business. Some distributors are committed to a price policy of an eighth to a quarter of a cent per gallon below the major company quotations, but this condition will persist throughout the winter in the case of contract consumers.

Kerosene shared the spotlight with No. 2, 3 and 4 fuel oil in the New York area last week. Demand is strong and stocks on the eastern coast are in line with consumption. Tankcar price of 6¼ cents for kerosene was reported in several directions at the end of last week with barge deliveries an eighth of a cent per gallon lower. In small quarters, kerosene space heaters were still adequate to maintain room temperatures at comfortable levels, but on the whole most homes so equipped had reverted to the oil fired furnaces on a permanent winter basis.

Heavy fuel oil showed little change from preceding conditions. Suppliers reported demand at a fairly satisfactory level, although none have escaped the ill effects of the general recession in manufacturing and railroad operation. Prices for heavy fuels are unchanged. Although subject to revision, the December quotations are generally unchanged from November with Bunker C offered at $1.25 per bbl. in New York, Boston and Philadelphia. The contrast between Atlantic and Pacific Coast fuel oil prices was brought out last week when the Navy Department announced the award of contracts for requirements on the west coast for the first six months of 1938. The Navy contracted for approximately 4,346,150 bbls. of fuel oil at a fraction under 92 cents per bbl. This is in contrast to the Atlantic Coast contracts awarded a few weeks ago calling for about three-quarters of a million bbls. of fuel oil at the average price of $1.449 per bbl.

Prior to last week's sub-freezing temperatures, the gas oil and No. 2 fuel oil quotations on the Gulf Coast were somewhat soft due to a lack of export demand and limited coastwise business for the early winter season. Reports in New York indicated, however, that instructions for prompt loading were placed by domestic distributors last week with Gulf Coast suppliers and the market promptly stiffened. Price levels are mostly unchanged at 4½ to 4⅝ cents per gallon for export grade of gas oil and No. 2 fuel oil, but there was more offered at the high of the spread than at the start of the week. It was thought likely that the material available at 4½ cents would be promptly absorbed and that the higher level of the market will be more general for the immediate future.

Some north Atlantic buyers are just now reentering the fuel oil market for supplies to replace those accumulated during the summer and held in northern storage for the winter trade. Drains on stocks were relatively light in this area until more intensive heating require-

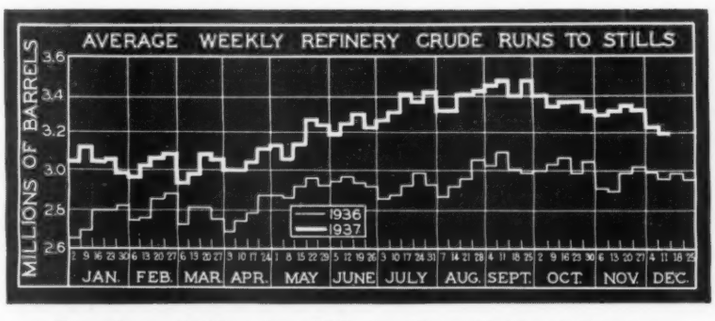
(Continued on Page 106)

A. P. I. Weekly Refinery Statistics

Week Ending December 11, 1937

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	536,000	17,888,000	14,030,000
Appalachian	88.4	103,000	2,814,000	950,000
Indiana, Illinois, Kentucky	92.4	425,000	10,527,000	7,000,000
Oklahoma, Kansas, Missouri	84.7	276,000	6,288,000	3,708,000
Inland Texas	56.6	132,000	2,134,000	1,845,000
Texas Gulf	95.7	654,000	9,936,000	11,656,000
Louisiana Gulf	96.6	135,000	1,973,000	3,487,000
North Louisiana and Arkansas	63.7	48,000	403,000	532,000
Rocky Mountains	69.7	43,000	1,563,000	640,000
California	90.9	515,000	13,117,000	73,286,000
Total reported	89.0	2,867,000	66,643,000	117,134,000
Estimated unreported	.....	333,000	3,870,000	3,020,000
*Estimated total	.....	3,200,000	70,513,000	120,154,000
*Estimated total, previous week	.....	3,230,000	70,193,000	121,319,000
*December 12, 1936	.....	2,955,000	58,015,000	108,269,000

*Bureau of Mines, currently estimated.



Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending December 4, 1937	303,034,000 barrels
Week ending November 27, 1937	304,156,000 barrels
Week ending December 5, 1936	288,236,000 barrels

RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of December 14, 1937

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dir.	Inc. tax	Kero. tank wag.
Chicago, Ill.	15 3	13 3	4 0	10 2
Decatur	15 3	13 8	4 0	10 2
Joliet	15 3	13 8	4 0	10 2
Peoria	15 3	13 8	4 0	10 2
Quincy	15 1	13 6	4 0	10 0
Davenport, Ia.	15 3	13 8	4 0	‡13 2
Des Moines	15 1	13 6	4 0	‡13 0
Mason City	15 4	13 9	4 0	‡13 3
Sioux City	15 3	13 8	4 0	‡13 2
Duluth, Minn.	17 0	15 5	5 0	10 9
Mankato	16 7	15 2	5 0	9 5
Minneapolis	16 7	15 2	5 0	10 6
Lacrosse, Wis	16 7	15 2	5 0	10 6
Green Bay	17 0	15 5	5 0	10 9
Milwaukee	16 5	15 0	5 0	10 4
Detroit, Mich.	15 1	13 6	4 0	9 8
Grand Rapids	16 3	14 8	4 0	11 0
Saginaw	16 1	14 6	4 0	9 1
Evansville, Ind.	16 8	15 3	5 0	†10 7
Indianapolis	16 9	15 4	5 0	†10 8
South Bend	17 2	15 7	5 0	†10 2
Fargo, N. Dak.	16 7	15 2	4 0	11 6
Minot	17 9	16 4	4 0	12 8
Huron, S. Dak.	17 1	15 6	5 0	11 0
Kans. City, Mo.*	14 6	13 1	4 0	8 5
St. Louis*	14 9	13 4	4 0	9 8
St. Joseph	14 6	12 4	4 0	9 0
Wichita, Kans.	14 1	12 4	4 0	8 5

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Iowa kerosene prices include 3-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Inc. tax	Kero. tank wag.
Atl'tic City, N. J.	12.75	11.25	4.0	9.0
Newark	12.75	11.25	4.0	9.0
Annapolis, Md.	14.85	13.35	5.0	9.5
Baltimore	14.25	12.75	5.0	9.0
Cumberland	16.65	14.15	5.0	10.0
Wash'g'n, D. C.	12.5	11.0	3.0	9.5
Danville, Va.	17.45	14.95	6.0	12.9
Norfolk	16.25	13.75	6.0	11.5
Petersburg	16.55	14.05	6.0	11.7
Richmond	16.55	14.05	6.0	11.7
Roanoke	17.75	15.25	6.0	12.9
Charles'n, W. V.	17.05	14.55	6.0	12.6
Parkersburg	16.35	13.85	6.0	11.2
Wheeling	17.0	14.85	6.0	12.2
Charlotte, N. C.	18.65	16.15	7.0	12.6
Hickory	19.15	16.65	7.0	13.0
Mt. Airy	18.95	16.45	7.0	12.8
Raleigh	18.25	15.75	7.0	12.1
Salisbury	18.75	16.25	7.0	12.7
Charleston, S. C.	17.25	14.75	7.0	11.1
Columbia	18.25	15.75	7.0	12.1
Spartanburg	18.95	16.45	7.0	12.9

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5-cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank wag.	Gasoline Net dlr.	Inc. tax	Kero tank wag.
Atlanta, Ga.	21.0	18.0	7.0*	†12.0
Augusta	21.0	18.0	7.0	*14.0
Macon	21.0	18.0	7.0	*14.5
Savannah	19.0	16.0	7.0	*12.0
Birm'ham, Ala.	22.0	19.0	8.0	12.0
Mobile	22.0	19.0	9.0	11.0
Montgomery	22.0	19.0	9.0	14.5
Jackson, Miss.	20.0	17.0	7.0	*13.0
Vicksburg	20.0	17.0	7.0	*13.0
Jacksonville, Fla.	20.0	17.0	8.0	†10.0
Miami	20.5	17.5	8.0	†12.5
Pensacola	22.0	19.0	9.0	12.0
Tampa	19.0	16.0	8.0	10.5
Lexington, Ky.	19.5	16.5	6.0	11.0
Covington	19.0	16.0	6.0	11.0
Louisville	19.0	16.0	6.0	10.5
Paducah	19.5	16.5	6.0	10.0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1-cent state tax. †Subject to 2-cent discount.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Inc. tax	Kero. tank wag.
Denver, Colo.	16.5	5.0	11.5
Grand Junction	19.0	5.0	15.0
Pueblo	16.0	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	16.0	5.0	13.0
Butte, Mont.	19.0	6.0	15.5
Billings	19.5	6.0	15.5
Helena	19.5	6.0	15.5
Great Falls	19.5	6.0	15.5
Salt Lake City, Utah	19.5	5.0	16.0
Twin Falls, Ida.	21.0	6.0	18.0
Boise	21.5	6.0	18.0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of one-half cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank wag. con'r.	Gasoline Di-vided dir.	Inc. tax	Kero. tank wag.
Ohio points	16.5	15.5	5.0	*13.5

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Tank wag. dir.	Gasoline Tank car con'r.	Inc. tax	Kero. tank wag.
Albany, N. Y.	14.5	13.0	5.0	9.0
*Met. N. Y.:				
Manh't'n, Br'nx	14.5	13.0	5.0	9.0
Staten Island	14.5	13.0	5.0	9.0
Q'ns. & Brklyn	14.5	13.0	5.0	9.0
Buffalo	15.05	13.54	5.0	8.5
Rochester	15.0	13.67	5.0	8.5
Syracuse	15.0	13.62	5.0	9.5
Boston, Mass.	11.75	13.0	4.0	8.5
Portland, Me.	14.8	13.0	5.0	8.75
Manch'ter, N. H.	15.8	13.5	5.0	9.5
Burlington, Vt.	15.4	13.4	5.0	9.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon price at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank wag.	Gasoline Serv. sta.	Inc. tax	Kero. tank wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	9.0
Fresno, Calif.	18.5	19.5	4.0	12.0
Phoenix, Ariz.	21.0	22.0	6.0	‡16.0
Reno, Nev.	20.0	21.0	5.0	13.0
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

‡Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Gasoline Dir.	Inc. tax	Kero. tank wag.
Omaha	17.7	16.2	6.0	10.5
McCook	18.1	14.1	6.0	11.1
Norfolk	18.1	16.6	6.0	10.9
North Platte	18.5	17.0	6.0	11.3
Scotts Bluff	19.2	16.0	6.0	12.0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Inc. tax	Kero. tank wag.
N. Orleans, La.	19.75	17.25	*10.0	†11.0
Baton Rouge	17.75	15.25	8.0	12.0
Alexandria	18.25	15.75	8.0	10.5
Lafayette	18.75	16.25	8.0	13.0
Lake Charles	18.75	16.25	8.0	12.5
Shreveport	17.25	14.75	8.0	9.5
Kn'xv'le, Tenn.	20.75	18.25	8.0	14.0
Memphis	18.75	16.25	8.0	12.0
Chattanooga	20.25	17.75	8.0	13.5
Nashville	19.75	17.25	8.0	11.5
Bristol	19.50	18.25	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Louisiana kerosene prices include 1 cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Inc. tax	Kero. tank wag.
Philadelphia, Pa.	13 25	12 25	5 0	10 5
Pittsburgh	15 0	13 0	5 0	11.0
Allentown	14 25	12 75	5 0	11.0
Erie	14 5	13 0	5.0	10.0
Scranton	14 5	13 0	5 0	11.0
Altoona	15 0	13 0	5 0	11.0
Dover, Del.	14 5	....	5 0	11.0
Wilmington	14 0	....	5 0	11.0
Spring'd, Mass.	13.3	....	4 0	8 5
Worcester	14.3	....	4.0	9.0
Hartford, Conn.	13 6	....	4 0	9.0
New Haven	13 5	....	4 0	9.0
Providence, R. I.	13 5	....	4 0	8 5

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Inc. tax	Kero. tank wag.
Muskogee, Okla.	14.5	5.0	7.0
Oklahoma City	14 0	5 0	8.0
Tulsa	14.0	5.0	6.0
Ft. Smith, Ark.	14 75	5 0	8.0
Little Rock	17.25	7.5	9.5
Texarkana	14 5	5 0	8 5

Texas

	Gasoline Tank wag.	Gasoline Serv. sta.	Inc. tax	Kero. tank wag.
Dallas, Tex.	14 0	18.5	5.0	8.0
Fort Worth	14 0	18 0	5 0	8.0
Houston	14 5	19 0	5 0	8.0
San Antonio	14 5	18 5	5 0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150 gallon lots if covered by contract.

Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank wag.
Halifax, N.S.	24 0	8 0	18.5
St. John, N.B.	24 0	8 0	18.5
Montreal, Que.	21 0	6 0	17.5
Toronto, Ont.	22 0	6 0	17.0
Hamilton, Ont.	22 0	6 0	17.0
Winnipeg, Man.	27 5	7 0	20.7
Brandon, Man.	29 8	7 0	22.8
Regina, Sask.	28 5	7 0	22.0
Saskatoon, Sask.	31 3	7 0	24.8
Edmonton, Alta.	28 0	7 0	23.0
Calgary, Alta.	25 5	7 0	20.5
Vancouver, B.C.	23 0	7 0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon price. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Retail Price Changes

Standard Oil Co. (Indiana) December 6 reduced tank-wagon kerosene 1.1 cents in Mankato and advanced tank-wagon kerosene .5 cent in Saginaw, South Bend, Kansas City, St. Joseph and Wichita.

Standard Oil Co. of Kentucky November 29 reduced tank-wagon and dealer gasoline .5 cent in Macon; November 8 advanced tank-wagon and dealer gasoline 1 cent in Tampa; November 18 reduced tank-wagon and dealer gasoline 1 cent in Tampa.

Standard Oil Co. of Nebraska December 7 advanced tank-wagon kerosene 1 cent in McCook.

Standard Oil Co. of Louisiana December 8 reduced tank-wagon kerosene 1.5 cents in Alexandria.

Atlantic Refining Co. December 10 reduced dealer gasoline .5 cent in Philadelphia.

Old Ocean Purchase

DALLAS, Tex.—J. S. Abercrombie and Dan Harrison of Houston are reported to have purchased from Coronado Exploration Co. and Atlati Royalty Corp. a half interest in the Old Ocean field, Brazoria County, for approximately $3,000,000, of which $600,000 was cash and $2,250,000 in oil.

Water Paper

The U. S. Geological Survey has recently issued Water-Supply Paper 796-A describing methods of locating salt-water leaks in water wells. While this paper deals with domestic and industrial water wells, the several methods described could be used in checking leaks in gas or oil wells.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of December 14, 1937

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below (3d gr.)	.04	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.05	.05¼
60-62 400 grades:		
62 oct. and below (3d gr.)	.04	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.05	.05¼
64-66 375	.04⅝	.05
68-70 360	.05	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.05	.05¼
60-62 400	.04	.04¼
64-66 375	.04⅝	.05

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)

U. S. Motor grades:		
62 octane and below	.04¾	.05
63-66 octane	.05	.05¼
67-69 octane	.05¼	.05½
70-72 octane (regular)	.05¾	.05⅞

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below	.04¾	.05⅛
63-66 octane	.05	.05¼
67-69 octane	.05⅜	.05⅝
70-72 octane (regular)	.05¾	.05⅞

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04	.04⅜
63-66 octane	.04⅜	.04⅝
67-69 octane	.04⅝	.05
70-72 octane (regular)	.05	.05⅜
60-62 400 grades:		
62 octane and below	.04	.04⅜
63-66 octane	.04⅜	.04⅝
67-69 octane	.04⅝	.05
70-72 octane (regular)	.05	.05⅜
64-66 375	.04⅜	.05⅛
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04¾	.05⅛
60-64.9 octane	.06⅞	.07
65-70 octane	.07	.07⅛
64-66 390	.05⅝	.05¾
68-70 350	.05¾	.05⅞

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.07½	.08½
58-60 400, 65 oct. and higher	.08¼	.09¼

EAST COAST (Domestic)—

U. S. Motor, 60-64.9 octane:		
*New York (Bayonne)	.07	.07⅛
Philadelphia	.07	.07⅛
Boston	.07½	.07⅝
Baltimore	.07	.07⅛
Charleston, S. C.	.07	.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)	.07⅛	.07⅝
Philadelphia	.07⅛	.07⅝
Boston	.07¼	.07⅝
Baltimore	.07⅛	.07½
Charleston, S. C.	.07⅝	.08

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05¼	.05½
60-64.9	.05⅝	.05½
65 octane and higher	.05½	.05⅝

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)	.05	.05¼
52-54 450 (blending)	.05	.05¼
54-56 450 (blending)	.05¼	.05⅝

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.03¼
Grade 18-55	.03⅞	.04

NORTH TEXAS—

Grade 26-70		.03¼
Grade 18-55	.03⅞	.04

CALIFORNIA—

75-85 375-390	.06¾	.07½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70		.03⅝

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.		.04¼
41-43 gr., 300-350 i.b.p., 110-125 flash, 500-520 e.p.	.04¼	.04½
46-48 gr., 210-230 i.b.p., 480 max., e.p.	.04¾	.04⅞

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43		.04¼
42-44	.04¼	.04½

NORTH TEXAS—

41-43		.04¼

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43		.04½

ARKANSAS (Ark., N. La., Miss. del.)—

41-43		.04½

PENNSYLVANIA (inland refineries)—

45	.05½	.05⅝
46	.05⅝	.05¾
47	.05¾	.05⅞

CHICAGO (Based on Group 3)—

41-43	.04	.04¼
42-44	.04¼	.04½

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05½	.06½

NEW YORK (Bayonne, N. J.)—

41-43		.06 3/10

***GULF COAST (domestic)—**

41-43	.04⅞	.05

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42		.04⅛
No. 1 straw, 38-40	.03⅞	.04
No. 2 straw, 32-36	.03¾	.03⅞
No. 2 dark, 32-36	.03⅝	.03¾
No. 3 zero to 15, 28-32	.03⅜	.03⅝
No. 3, 15 and above, 28-32	.03	.03⅛

NORTH TEXAS—

No. 1 prime white, 38-42	.04	.04⅛
No. 1 straw, 38-40	.03⅞	.04

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03½	.03⅝

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36		.03¾

CHICAGO (Based on Group 3)—

No. 1 prime white, 38-40	.04	.04⅛
No. 1 straw, 38-40	.03⅞	.04
No. 2 straw, 32-36	.03¾	.03⅞
No. 2 dark, 32-36	.03⅝	.03¾
No. 3, zero to 15, 28-32	.03⅜	.03⅝
No. 3, 15 and above, 28-32	.03	.03⅛

NEW YORK (Bayonne, N. J.)—

*No. 1		.06 3/10
*No. 2		.05½
*No. 4		.05¼

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.82½	.90
Below 18 fuel oil, industrial	.72½	.77½

NORTH TEXAS—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.10	1.15
No. 5, low cold test, 18-22	.82½	.87½
Below 18 fuel oil, industrial	.72½	.77½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.80	.85

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.03	.03⅛
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.82½	.90
No. 5, 15 and above (18-22)	.80	.85
No. 6, low cold test, 10-16	.75	.82½

PENNSYLVANIA (inland refineries)—

36-40	.04⅞	.05⅛

CALIFORNIA

Los Angeles:		
30-34 gas oil, per bbl.	1.50	1.70
24 plus diesel, per bbl.	1.50	1.70
24 plus diesel (bunkers)	1.60	1.75
12-16 (bunkers at tidewater)	1.05	1.10
10-16 (cargo lots)	.88	1.00
12-17 (tankcars)	.95	1.10
10-17 (high sulfur)	.65	1.00
San Joaquin Valley:		
10-18 (tankcars)	.65	1.00
24 plus diesel, per bbl.	1.50	1.70
San Francisco:		
24 plus diesel, per bbl.	1.60	1.70
24 plus diesel (bunkers)	1.60	1.70
10-16 (bunkers)	1.10	1.15

GULF COAST—

28-30 gas oil	.04½	.04⅝
28-30 diesel (bunkers)		1.90
Bunkers (bulk cargoes)		.85
Bunker C (bunkers)		1.05

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil	.05	.05¼
28-30 diesel (lighterage 6¼c per bbl.)		2.20
28-30 diesel (tankcars)		.05¼
Bunker C (to ocean-going ships in N. Y. harbor)		1.25
Industrial fuel (tankcars)	.04½	.04¾

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

Bright Stocks:		
190-200 D, 15-25		.19
150-160 D, 0-10		.16
150-160 D, 15-25		.15
150-160 E, 15-25		.14½
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.13½
600 dark green (untreated)		.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):

10 pour test	.18	.18½
15 pour test	.17	.17½
20 pour test	.16	.16½
25 pour test	.15	.15½
Steam refined:		
600	.07	.08
650	.10½	.11½
600 Pennsylvania flash	.11	.12
630 flash	.14	.15
600 Warren E filtered	.13	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:		
150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-3½		.13
400-3½		.14
100-2½ paraffin oil 15-20 Cold Test:		.06
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale Oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F. color, 400-405 flash:		
Zero pour test	.19	.19½
10 pour test	.18	.18½
15 pour test	.17½	.18
25 pour test	.16½	.17½
180 vis. at 70° F., 3 color:		
25 pour test	.17½	.18
200 vis. at 70° F., 3 color:		
Zero pour test	.22	.22½
10 pour test	.21	.21½
15 pour test	.20½	.21
25 pour test	.18½	.19

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale		.03

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0295	.0300
124-126 (a.m.p.) w.c. scale	.0295	.0300

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0505
133-135 (a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0295	.0300
124-126 (a.m.p.) y.s.	.0265	.0280
Petrolatum in barrels, carload lots:		
Dark green		.01⅞
Amber	.02⅞	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07¾	.07⅞
Cream	.05⅝	.05¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.05⅜	.05½
60-62 400	.05⅝	.05⅞
61-63 390		.05⅝
64-66 375		.05¾

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.05¾	.06
65-69 octane		.06¼
Above 69 octane		.06½

KEROSENE

GULF COAST—

41-43 prime white		.05½
41-43 water white		.05¼
44 water white		.05⅝

LOS ANGELES—

41-43 water white	.04½	.05

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

Cylinder Stocks:		
600 Warren E	.21½	.22
600 S.R. unfiltered	.16½	.17
630 S.R. unfiltered	.21	.21½
600 flash, S.R.	.21½	.22
630 flash, S.R.	.25½	.26
Bright Stocks:		
8 color	.23½	.24
6½ plus color in dilution	.23	.23½

NEUTRAL OIL

200-3 color	.30	.30½
150-3 color	.25½	.26

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
133-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude Scale:		
124-126 w.s.	.0295	.0300
124-126 y.s.	.0265	.0280

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 28, 1937)

East Texas (May 22, 1937)*	$1.35
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

West Texas

See gravity table.

Pecos County*	.91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co., and Humble Oil & Refining Co. †Shell Petroleum Corp.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light*†	1.30
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	.62
Hamilton Dome, Wyo. (Jan. 1, 1937)*	.67
Elk Basin, Wyo., light*†	1.30
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light	.70
Hogback, New Mex. (Jan. 1, 1937)*	1.21
Pondera, Mont. (Jan. 26, 1936)*	1.05
Salt Creek Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1.23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table)	
Artesia, N. Mex. (Jan. 28, 1937)†	.92
Maljamar, N. Mex. (Jan. 28, 1937)	.92
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.	.97
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Oct. 25, 1937) gr. scale $1.05 below 35°; $1.30 above 40°.	
Cut Bank, Mont. (Oct. 25, 1937), (posted by Northwest Refining Co.)	1.10
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

Southwest Texas

(January 28, 1937)

Pettus	1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Luling	1.00
Lytton Springs	1.12

Saxet and Taft take same gravity table as Gulf Coast.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90
Lisbon, La. (Dec. 13, 1937)*	.98

*Caddo Crude Oil Purchasing Co.

Gulf Coast

(January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 4, 1937)	1.12

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Eastern States

TIDE WATER ASSOCIATED OIL CO.
(Effective December 1, 1937)

Bradford, Pa.	$2.20
Allegany, N. Y.	2.20

SOUTH PENN OIL CO.
(Effective December 1, 1937)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.20
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.88
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.82
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.70
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1.27

PENNZOIL CO.
(Effective December 1, 1937)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	2.15
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	2.14
Includes Tidioute district.	
Group C	2.13
Includes Turkey and Tidioute districts.	
Group D	2.12
Includes Bear Creek and Porkey districts.	
Group E	2.10
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

PURE OIL CO.
(Effective December 1, 1937)

Cabin Creek, W. Va.	1.82
Bradford Hollow, W. Va.	1.82
Kelly Creek, W. Va.	1.82

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	$1.25
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich. (July 23, 1937)*	1.27
West Branch, Mich. (July 22, 1937)	1.09
Buckeye (July 23, 1937)	1.24½
Arenac, Mich (July 1, 1937)	1.21
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River	1.42
Kentucky River	1.50
Western Kentucky	1.40

*Posted by Pure Oil Co.
Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17

TURNER VALLEY NAPHTHAS AND CRUDE OIL
(September 1, 1937, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65 gravity and higher	$2.30
Discolored naphtha and crude oil 40-40.9 gravity	1.80
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.84

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

Mexico

Heavy Mexican crude	$ .90

*In U. S. currency, f.o.b. ship, based on November spot market transactions.

Crude Oil Price Changes

Caddo Crude Oil Purchasing Co. effective December 13, reduced the posted price of Lisbon, Louisiana, crude oil from $1.10 to 98 cents per barrel, but agreed to take 100 per cent of the allowable production to which its lines were connected, instead of 60 per cent.

New York Market

(Continued from Page 103)

ments developed last week. Of course, a large part of the stock replenishment business will be on the basis of contracts executed early in the fall or during the past summer, but sufficient spot business remains to have a bearing on the market.

With the closing of the New York barge canal last month, many of the north Atlantic kerosene customers will also turn to the Gulf Coast for their winter supply requirements not previously moved to storage. This type of business probably will be sufficient to bring a stiffening of the Gulf Coast kerosene market which at the end of the preceding week was floundering.

Motor fuel has been soft on the Gulf Coast for several weeks and no sign of improvement was reported last week. Buyers are still able to obtain their requirements at concession prices. Some suppliers are refusing to compete for the available business and are responding to inquiries with quotations admittedly above the market. Cargoes of U. S. Motor gasoline on the Gulf Coast are quoted as low at 5¼ cents while 5⅜ to 5½ cents are the prices most frequently heard on 64-66, 375 e.p. motor fuel. Higher quality gasoline for domestic consumption is 5⅞ cents to 6 cents, although no movement has been reported for several weeks at the higher figure. On the other hand, it has been reported that 70 octane gasoline can be purchased for coastwise movement at 5¾ cents per gallon. There was practically no change in the western Pennsylvania market last week, although contract customers were reported ordering more freely of bright stocks and cylinder oils. Neutral oils are unchanged as is wax.

The demand for high octane gasoline and kerosene is holding reasonably high, Pennsylvania refiners report, and fuel oil business responded along lines similar to those prevailing on the Atlantic Coast.

Crude Prices by Gravities

	Oklahoma-Kansas	Oklahoma-Kansas	North and Central Texas	East Central Texas (Mexia district)	North Louisiana-Arkansas	Gray County, Texas	Hutchinson-Carson counties, Texas	Rodessa, Louisiana-Texas and Panola County, Texas	Conroe, Tomball, Raccoon Bend, (Deep) Satsuma	Gulf Coast	Gulf Coast	Lea County, N. Mex. West Texas except Pecos County	Mirando district, Texas	Marion County, Texas	Refugio, Greta, Saxet, Taft, Texas	Anahuac, Flour Bluff, Dickson, Turtle Bay	White Castle, Louisiana	Iowa, Louisiana	Cayuga, Texas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Bel. 18	....	....	....	....	....	....	....	....	....	$.90	....	....	....	....	....	....	....	$.90	....
18-18.9	....	....	....	....	....	....	....	....	....	.92	....	....	....	....	....	....	....	.92	....
19-19.9	....	....	....	....	....	....	....	....	....	.94	....	....	....	....	....	....	$.94	.94	....
20-20.9	....	....	....	....	....	....	....	....	....	.96	$.95	....	$.96	....	$1.01	....	.96	.96	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.98	....	1.03	....	.98	.98	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	1.00	....	1.05	....	1.01	1.01	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	1.02	....	1.07	....	1.04	1.04	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.04	....	1.09	....	1.07	1.07	....
Bel. 25	....	$.98	....	....	$.90	....	....	$.93	....	....	....	....	....	$.90	....	....	....	....	$.88
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1.10	1.10	$.78	1.06	.92	1.11	....	1.10	1.10	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	1.13	....	1.13	1.13	.92
27-27.9	....	1.04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	1.15	....	1.15	1.15	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	1.17	....	1.17	1.17	.96
Bel. 29	$1.06	....	$.96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19	....	1.19	1.19	.98
30-30.9	1.10	1.10	1.00	1.07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35	....	....	....	....	....	$.96	$.91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	....	.98	1.26	1.12	1.31	1.26	1.29	1.29	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	....	1.00	1.28	1.14	1.33	1.28	1.29	1.29	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	....	1.02	1.30	1.16	1.35	1.30	1.29	1.29	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	....	1.04	1.32	1.18	1.37	1.32	1.29	1.29	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	....	1.06	1.34	1.20	1.39	1.34	1.29	1.29	....
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	....	1.08	1.36	1.22	1.41	1.36	1.29	1.29	....

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.
Columns 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tidewater Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—All purchasers (effective July 6, 1937).
Column 14—Magnolia Petroleum Co.
Column 15—Humble Oil & Refining Co. (effective July 6, 1937).
Column 16—Humble Oil & Refining Co.
Columns 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1937 High	1937 Low	Week ending Dec. 11 Sales	Week ending Dec. 11 High	Week ending Dec. 11 Low	Week ending Dec. 11 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1936 High	1936 Low	1935 High	1935 Low
114⅞	51½	10,100	57⅞	53	56⅛	Amerada Corp.	788,675	N.P.	50cQ	10-30-37	$2.00	125½	75	80	48⅛
37	18	9,600	21⅜	20¼	20¾	Atlantic Refining	2,664,000	$25	25cQ	12-15-37	1.25	35⅛	26⅝	28	20⅛
43⅜	10⅛	6,100	18⅝	17¼	17¼	Barber Co.	387,149	$10	75c	12-16-37	.50	38½	21	22½	11⅝
35¼	10	11,200	14⅜	14	14¼	Barnsdall Oil Co.	2,247,974	$5	25cQ	11-1-37	.80	28¼	14⅛	14⅜	5⅞
17⅞	7	23,800	9⅞	9⅜	9½	Consolidated Oil Corp.	13,919,417	N.P.	20cQ	11-15-37	.80	17¼	11½	12¼	6½
49	24	18,200	32¾	30	31½	Continental Oil of Delaware	4,682,615	$5	25cQ	12-20-37	1.50	44⅞	28⅛	35	15⅛
17⅝	4¾	8,100	7⅝	7¼	7⅝	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	13⅞	6⅝	7	1½
35⅜	14	9,000	21½	19⅜	19⅜	Mid-Continent Petroleum	1,855,912	$10	$1	21-1-37	1.15	30⅞	17¼	20½	9½
34	15⅜	2,100	18¼	15⅝	15⅝	Mission Corporation	1,399,345	N.P.	25c	12-24-37	.45	29⅞	16⅜	17⅜	10⅝
26¼	19¼	7,500	24	20	20⅜	National Supply	382,591	$25	$2 pf.‡	12-22-37	....	75½	19⅞	20⅞	9
22⅞	9	12,800	12⅞	12¼	12⅝	Ohio Oil Co.	6,563,377	N.P.	50cSA	12-15-37	.60	18	12⅛	14¼	9¼
29⅜	12⅛	1,400	14⅞	13½	13½	Pacific Western Oil	1,000,000	N.P.	65c	12-18-36	.65	23½	11⅜	14	6⅜
17⅛	7	100	8½	8½	8½	Pan American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	.60*	20⅝	12¼	21	10¾
64	30⅛	24,700	41⅜	39⅝	40⅜	Phillips Petroleum	4,449,052	N.P.	75cQ†	12-1-37	2.50	52⅜	38⅛	40	13⅜
29⅞	13	2,800	19¾	18	18	Plymouth Oil Co.	1,050,000	$5	35cQ	9-30-37	.90	27¾	11⅞	13	6⅛
24⅜	8¾	31,800	12⅛	11¼	11¼	Pure Oil Co.	3,281,120	N.P.	25c	12-1-37	....	24⅞	16	17	5⅞
6½	4⅛	15,300	6	5	5¾	Richfield Oil Corp.	3,986,638	N.P.	....	.....	....	..	..	..	..
54⅛	16	8,900	25	22	23⅛	Seaboard Oil of Delaware	1,224,283	N.P.	25cQ	9-15-37	1.00	44	30½	36⅞	20⅝
34⅜	14⅞	3,300	17⅜	16¼	16¼	Shell Union Oil	13,070,625	N.P.	50c	12-20-37	.25	28¼	14⅜	16½	5⅛
60⅝	26⅞	2,300	33	31½	32¼	Skelly Oil	1,006,348	$15	50c	9-30-37	....	47⅜	19½	20½	6⅛
23¼	13	37,900	16	14⅞	15¼	Socony-Vacuum	31,151,071	$15	30c	12-15-37	.70	17½	12½	15⅜	10⅝
50	28	37,900	30½	29	29⅛	Standard Oil of California	13,014,754	N.P.	80cQ†	12-15-37	1.20	47⅝	35	41⅛	27⅜
50	26½	12,600	34½	33½	33⅞	Standard Oil (Indiana)	15,196,241	$25	$1Q†	12-15-37	2.40	48⅛	32¾	33⅜	23
43	30⅝	500	43	39⅞	43	Standard Oil of Kansas	134,841	$10	$5	12-20-37	1.00	31	25	32	20
76	42	69,100	45⅞	42	44½	Standard Oil of New Jersey	25,856,081	$25	$1.25SA†	12-15-37	2.00	70⅜	51⅛	52⅜	35⅝
7¾	1½	7,700	2¾	2½	2⅝	Sun Oil	2,156,825	N.P.	25cQ	9-15-37	$1 & 6% Stk.	91	70	77	60⅛
77½	46	800	47½	46	47½	Superior Oil Corp.	1,388,079	$1	....	.....	....	6¾	3	3½	1⅝
65⅛	34¾	52,500	42⅞	39¼	40½	Texas Corp.	10,896,858	$25	50cQ	1-2-38	1.50	55¼	28⅞	30¼	16⅛
9⅝	2	3,100	4	3⅞	3⅞	Texas Gulf Producing Co.	888,134	N.P.	10c	12-23-37	.05	8⅞	4⅜	4⅜	2⅛
16⅝	5⅜	4,900	8⅝	8⅛	8⅜	Texas Pacific Coal & Oil	888,237	$10	10c	12-1-37	.25	15¼	7½	9¼	3¼
21⅝	13⅛	8,300	16	15⅛	15⅜	Tide Water Associated	6,288,512	N.P.	15c Spl.	12-17-37	.70	21¾	14¾	15⅞	7⅝
28¼	17½	6,000	20½	19⅜	19½	Union Oil of California	4,386,070	$25	55cQ†	11-10-37	1.00	28½	20¾	24	14⅜
31½	22	800	23	22⅜	23	Union Tank Car Co.	1,200,000	N.P.	40cQ	12-1-37	1.20	31⅝	22⅝	26½	20⅞
6¼	1¾	1,600	2¾	2⅜	2½	Wilcox Oil & Gas	424,839	$5	....	5-10-28		5¼	2¾	3⅛	1

*Payable in 3½% notes. †Includes extras. ‡One-tenth share $2 preferred stock.

New York Curb Exchange

1937 High	1937 Low	Week ending Dec. 11 Sales	Week ending Dec. 11 High	Week ending Dec. 11 Low	Week ending Dec. 11 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1936 High	1936 Low	1935 High	1935 Low
9½	6⅝	5,700	7¾	7⅛	7⅝	American Republics Corp.	1,308,049	$10	30c	12-27-37	....	..	..	..	..
21⅜	7	3,800	11⅞	10¾	11½	Bridgeport Machine Co.	260,000	N.P.	1.25	12-30-37	$1.00	21	13¼	14⅛	3⅜
51½	37¼	100	39¼	38⅝	39¼	Buckeye Pipe Line Co.	200,000	$50	75cQ	12-15-37	3.25	50	39⅜	42½	30¼
123	95½	50	98½	98½	98½	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-30-37	7.00	124¾	105	157	115
5⅜	1½	23,400	2⅛	2	2	Cities Service	37,804,394	N.P.	....	6-1-32	....	7⅜	3	3¼	⅝
5½	1½	5,400	2⅝	2	2¼	Cosden Petroleum	399,687	$1	....	.....	....	4½	1½	1½	¼
38¾	20¼	3,600	24⅝	23½	24	Creole Petroleum	6,974,356	$5	50cSA†	12-15-37	.50	39	19⅞	23¾	10
18⅝	6½	1,000	7½	7⅛	7¼	Darby Petroleum	351,390	$5	25cSA	1-15-38	.50	18⅛	9	8⅞	4
8⅜	2¼	1,400	3⅞	3⅜	3⅝	Derby Oil & Refining	263,162	N.P.	....	.....	....	6¾	1⅞	2	⅝
47½	24½	No sales	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	11-1-37	4.00	47½	38½	38	33¼
63½	33	5,600	38⅞	36¾	37	Gulf Oil Corp.	9,076,202	$25	25cQ	12-1-37	1.50, 100% Stk.	59	36	74¾	50¼
87	54⅞	3,500	62¾	61	61⅛	Humble Oil & Refining	8,923,935	N.P.	62½cQ	12-27-37	1.50	80	57	64	44
24¼	14½	3,500	18⅜	17⅞	17⅞	Imperial Oil of Canada	26,919,871	N.P.	62½cSA‡‡	12-1-37	1.25	24½	19¾	22½	15⅝
15	5⅞	800	8½	7½	7½	Indiana Pipe Line	300,000	$10	50cSA	11-15-37	.80	9¾	5½	6⅛	3⅝
39½	23½	3,000	29⅜	28¾	28¾	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-37	2.50	39⅝	32⅝	39¾	28
8¾	2⅜	2,100	3¼	3	3	Kirby Petroleum Co.	500,000	$1	10c	9-15-37	.20	5¾	2⅝	3	1⅞
34	12½	4,900	19¼	17¼	19	Lion Oil Refining	270,000	N.P.	50cQ†	12-24-37	.75	17¾	7⅜	8⅛	3⅛
14¼	5¼	1,700	7⅞	7⅝	7⅝	Lone Star Gas	5,382,723	N.P.	20c	12-22-37	.60	14¼	9⅞	10⅞	4½
15¼	6¾	15,300	8⅛	6⅞	8⅛	Louisiana Land & Exp.	3,000,000	N.P.	20cQ†	12-15-37	.50	15⅜	9⅞	11⅜	4⅜
14⅝	6¼	2,800	7¼	6¾	7¼	Midwest Oil Co.	998,444	$10	50c	12-15-37	....	....	..	..	..
7⅞	4⅛	1,800	4⅞	4⅝	4¾	Mountain Producers	1,682,182	$10	30cSA	12-15-37	.60	8⅜	5	5⅝	4⅛
19½	12	1,800	14¼	13⅝	14⅛	National Fuel Gas	3,810,183	N.P.	25cQ	10-15-37	1.00	23	17⅜	20	11⅝
12½	7¼	600	8½	8⅛	8⅛	National Transit	509,000	$12.50	55cSA	12-15-37	.75	15⅜	9¼	10⅝	6⅜
5	1⅛	400	1½	1⅜	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	.01	6⅝	1⅝	2⅛	1
5⅜	4	700	5¼	4¾	5¼	New York Transit	100,000	$5	60c Spl.	12-28-37	.35	6¼	4¼	4⅞	3
12¾	5¾	No sales	..	..	..	Northern Pipe Line	120,000	$10	25cSA	12-1-37	.40	9¾	4⅞	8	5¼
9⅝	2¾	20,100	5⅜	4¾	5⅜	Pantepec Oil	1,608,700	N.P.	....	.....	....	10⅛	3¼	4⅜	1¼
13¾	2	3,200	3¾	3	3⅝	Root Petroleum Co.	336,045	$1	25c	2-1-37	.50	19¼	4½	5	1⅛
6½	2¼	1,200	3½	3¼	3¼	Ryan Consolidated	296,931	N.P.	....	.....	....	4¾	1⅞	2½	⅝
7¼	3⅞	No sales	..	..	..	Southern Pipe Line	100,000	$10	25cSA	9-1-37	.25	7⅞	3¼	5	3⅞
56	35	700	38	37	37	South Penn Oil	1,000,000	$25	$1.15Q†	12-28-37	2.60	44	32½	34½	21⅝
42	20	50	20	20	20	South West Penna. Pine Lines	35,000	$50	50cQ	12-31-37	13.00	60	44	56	44¼
21⅛	14¾	1,600	18	17¼	17¼	Standard Oil of Kentucky	2,604,790	$10	40cQ†	9-15-37	1.35	23⅜	17⅛	24	18
13¾	8	500	9	8½	8¾	Standard Oil of Nebraska	188,403	$25	25c	3-29-37	.25	14⅝	11	12	7¾
45	16	900	23¼	22⅛	22¼	Standard Oil of Ohio	753,740	$25	75cQ†	12-15-37	2.00	40	21¾	23⅜	11½
4⅞	2	4,900	3	2⅞	3	Sunray Oil	1,910,119	$1	10c	12-24-37	.10	5	2⅜	2⅞	⅞
7⅝	2	500	4½	4¼	4¼	Texon Oil & Land	336,028	$2	15cQ	1-3-38	.60	9¾	5⅜	6⅞	5
13⅝	3	24,300	5⅜	4⅞	5	United Gas Corp.	7,818,959	$1	10c	9-15-37	.20	10¾	4	4⅞	⅞

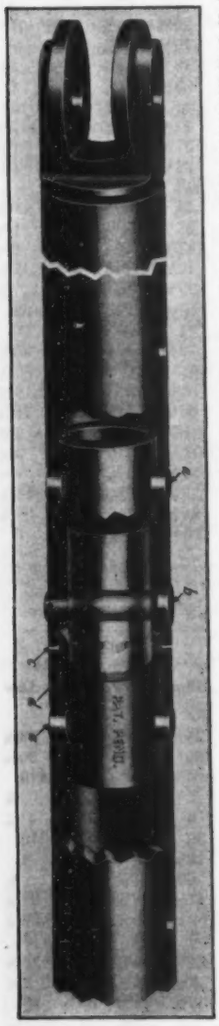
†Includes extras. ‡Payable in Canadian funds.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

NEW OR IMPROVED EQUIPMENT

Master Chain Marks Important Step in Rotary Equipment

An important step in the progress toward efficient equipment for deep drilling has been recorded, according to the Baldwin-Duckworth Chain Corp., Springfield, Mass., in the Master rotary chain announced by the company. Patented steel cotters permit easy assembly in the field without special tools. The chain has a minimum ultimate strength of 185,000 pounds.



Solid rollers, internally ground, are made from solid bar. Internally and externally ground seamless bushings are keyed to side plates. The chain is built in staggered assembly to assure perfect balance under high-speed, heavy-load operation, adding materially to chain strength as well.

The Baldwin patent pin lock, a feature of the Master chain, has been fully tested on the Baldwin series of oil-well chains. This pin lock supplies the rigidity of a riveted-type chain and the assembly and disassembly advantages of a detachable-type chain. Ample facilities are provided for the penetration of oil to the chain joints.

This carefully finished, well-lubricated chain bearing of carefully treated steels is said to offer exceptionally long life under the most severe drilling conditions. The side bars are of forged steel. Forged pins with an upset head are practically integral with the side links after assembly.

In the illustration, *a* shows welds; *b*, coupling-pins, *c*, pole sections meet; *d*, where pole joint makes up.

Here and There With Men Who Manufacture Equipment

Murray B. Wilson, associated with the organization since 1923, has been named manager of the New York sales district of the American Rolling Mill Co., Middletown, Ohio. He succeeds Cliff Spear, who was forced to curtail his activities because of ill health.

R. H. Griffin, manufacturing superintendent, and F. M. Kehoe, in charge of research and development at the home office and plant of the Cavins Co., Long Beach, Calif., are on an extensive trip through the Mid-Continent oil fields. They plan to visit each of the Cavins headquarter agencies with a view of studying recent developments of the Cavins hydraulic suction bailer and the Cavins perforation washer.

Harold M. Sauers has been made service manager of the Wico Electric Co., Springfield, Mass.

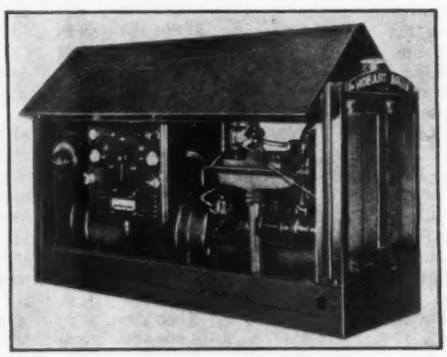
F. H. Apperson, formerly assistant to F. A. Dunigan, of the Dunigan Supply & Tool Co., in Breckenridge, Tex., has been appointed district manager for the McCamey, Tex., store and is now located in McCamey.

The Worthington-Gamon Meter Co., of Harrison, N. J., has appointed W. C. Flanders sales manager, to succeed G. H. Gleeson, formerly vice president in charge of sales, who resigned. Mr. Flanders started with the company 15 years ago.

The following new representatives are announced by the Homestead Valve Manufacturing Co., Corapolis, Pa.: Charles A. Randorf, 220 Delaware Avenue, Buffalo, N. Y.; Beeler-MacWilliams, Inc., 1002 Hills Building, Syracuse, N. Y.; the W. E. Mushet Co., 311 S. W. Front Avenue, Portland, Ore.; Clowe & Cowan, Inc., 401 Harrison Street, Amarillo, Tex.; The Paul R. Winston Co., 206 Construction Building, Dallas, Tex.; The Waterworks Equipment Co., 149 West Second South Street, Salt Lake City, Utah; Tazewell Buchanan, 2620 Grace Street, Richmond, Va.

Junior Model Welder Adapted for Various Oil-Field Jobs

A Junior model 200-ampere gasoline-engine-driven arc welder is announced by the Hobart Brothers Co., Troy, Ohio, to meet the demand for



a unit of smaller size and lighter weight. It is said to be especially adapted for installation on emergency service trucks, and operators in the oil fields are using it for various purposes where the work factor does not call for the larger machines.

One new welder is a completely equipped, factory-built outfit on sturdy steel skids, with canopy enclosure. Hinged side panels which fold up over the top can be padlocked when closed. Equipment includes electric self-starter, battery ignition with generator, built-in fuel-pump, air-filter, fuel-filter, variable speed governor, sectional steel radiator, built-in fuel-tank and other engine equipment as furnished with larger Hobart machines.

The welding generator is provided with Hobart's remote control, polarity switch, built-in exciter, dual control and other features exactly the same as in larger outfits.

Many Personnel Changes Are Announced by Dowell, Inc.

Dowell, Inc., announces important appointments and changes in personnel.

W. E. (Bill) Reardon, who was district manager at Seminole, Okla., has been transferred to the general offices in Tulsa as assistant manager.

Reardon *Russell* *Ross*

W. J. Russell, who was district manager in Tulsa, succeeds Mr. Reardon at Seminole, having charge of treating stations in Tulsa, Seminole and Stonewall, Okla.

H. W. Ross has been appointed assistant sales manager, with headquarters in Tulsa.

P. J. Lehnhard has been promoted from treating engineer in Tulsa to research engineer on the general office staff. E. S. Villines has been transferred from Hobbs, N. M., where he was treating engineer, to Tulsa as manager of the Tulsa station. Ward B. Tennis, formerly station manager at Great Bend, Kans., has been promoted to district sales engineer at Wichita, Kans. Jack Sutherlin succeeds Mr. Tennis at Great Bend.

The company also has announced establishment of a Panhandle district office in the Rule Building, Amarillo, Tex., with R. L. White as manager. The treating station is at Borger, Tex., with O. W. Lyons as station manager and R. L. Shrewsbury as treating engineer.

A new district office has been established at Stamford, Tex., with Fred R. Holland, formerly station manager at Ada, Okla., as manager. C. F. Wilkes is treating engineer, having been transferred from Cody, Wyo. The district office at Wichita Falls, Tex., has been discontinued, though treating facilities will be maintained there.

Rushing Portland Cement Plant

Kent B. Diehl, president and general manager of the recently organized Gulf Portland Cement Co., says its plant on the Houston Ship Channel will be completed and in production soon after the first of the year. More than $500,000 is being spent on the project. The plant will have a daily capacity of 3,400 sacks of cement.

Mr. Diehl has been associated with the cement industry for almost 20 years. Cement gave him a civil engineer's degree, for he worked his way through college as a cement salesman. Following graduation, Mr. Diehl joined the Ash Grove Portland Cement Co. as special engineer, later going to the Dewey Portland Cement Co. of Kansas City, Mo., as field engineer. Mr. Diehl became familiar with construction work in the building of two large cement plants in the Middle West.

Bullets of Steel "Hit Bull's-Eye" Two Miles Beneath Ground

An interesting application of General Electric miniature instruments and other electrical equipment is their use in "hitting the bull's-eye 2 miles underground" with the Lane-Wells Co.'s gun perforator. This ingenious tool was developed to perforate oil-well casings by firing steel bullets through them instead of using mechanical perforators. It is possible to perforate the casing exactly at the point desired and to perforate several strings of cemented casing if necessary.

A gun, which consists of several loaded firing-chambers mounted in a cylinder so as to fire at right angles to the cylinder, is lowered into the well with conductor-core cable until it reaches the level where perforation is desired. The charges then are set off electrically, one after another, by a firing-controller in the head of the gun. Contact for each shot is made by closing a switch in the service truck at the surface.

To facilitate handling of the perforating equipment at the well and to move it rapidly from job to job, the Lane-Wells Co. has equipped 25 trucks with apparatus for handling this work and 10 more are under construction.

Each truck has an engine-driven cable-drum which carries 8,000 to 13,500 feet of General Electric conductor cable; engine-driven generators to supply both alternating and direct current, and an instrument-panel. On the panel are General Electric instruments for determining electrical conditions in each circuit, and electrical weight- and depth-indicators. From this panel the operator may keep himself informed of the exact condition of his work at all times and may check any part of his equipment when necessary. For instance, one of the direct-current instruments provides a check on the actual occurrence of each shot, no matter how deep in the well the gun may be. These shots often are made at depths as great as 2½ miles. The gun must be located within the limit of 1 foot.

General Electric miniature instruments are used exclusively on the Lane-Wells gun-perforator trucks. The miniature type is employed to conserve panel space and because accuracy is retained in spite of the jar and vibration inflicted by travel over poor roads.

Bulletins, Booklets and Other Literature for the Trade

Rejuvenation of gas distribution systems with Carboseal antileak is discussed in literature which the Carbide & Chemicals Corp., 30 East Forty-second Street, New York, is sending on application.

Some 50 approved applications for Laminum in modern aircraft assemblies are listed in a bulletin being distributed by the Laminated Shim Co., Inc., Long Island City, N. Y.

Engine-driven centrifugal pipe-line pumps are the subject of discussion in the latest number of the Byron Jackson News Letter, published by the Byron Jackson Co., Los Angeles, Calif.

A 40-page catalog of Fast's self-aligning couplings, well illustrated, may be obtained from the Bartlett Hayward Co., Baltimore, Md., a division of the Koppers Co.

A 16-page bulletin on the "Oilwell" portable superheated steam generator has been prepared by the Oil Well Supply Co., which has branches throughout the oil fields.

Arc welding with the new 40-volt simplified arc welder is explained in a 24-page illustrated booklet obtainable from the Hobart Bros. Co., Troy, Ohio.

Among interesting illustrated articles in the current issue of the Water Tower, bimonthly publication of the Chicago Bridge & Iron Co., 2421 Old Colony Building, Chicago, is one on a Wiggins balloon roof tank installation in Ecuador.

Prepared by the Timken Steel & Tube Division of the Timken Roller Bearing Co., Canton, Ohio, is a "Guide for Users of High Temperature Steels," listed as technical bulletin No. 20. This folder presents technical data relating to the properties of Timken seamless tubes.

A new line of pressed-steel frame mounted ball-bearing centrifugal pumps is described in literature issued by the Worthington Pump and Machinery Corp., Harrison, N. J. Available for belt or motor drive, these type CF pumps are suitable for handling capacities from 10 to 300 g.p.m., at heads from 10 to 120 feet.

The Pennsylvania principle of effecting non-leakage dynamic hydraulic balance is described in a bulletin, mailed on request by the Pennsylvania Pump & Compressor Co., Easton, Pa.

The Aldrich Pump Co., Allentown, Pa., is mailing on application a bulletin on Aldrich repressuring pumps.

The latest catalog issued by Newman, Hender & Co., Ltd., Woodchester, Glos., England, a booklet of 46 pages, describes and illustrates Newman-Milliken glandless lubricated plug valves.

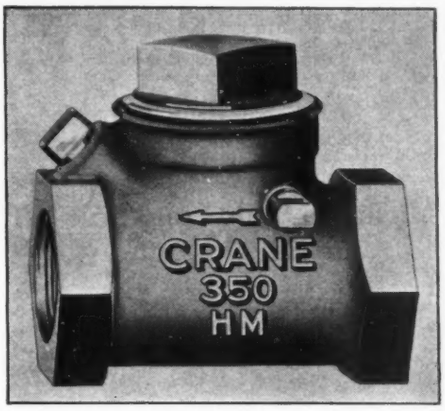
Scaife Filtering Unit Fills Need in Brine Disposal System

The Scaife type S filter unit, introduced by the Wm. B. Scaife & Sons Co. Oakmont, Pa., is designed to accomplish clarification of oil-field brines before their disposal in underground sands. This method of disposal, discussed in an article in The Oil and Gas Journal of December 9, requires that the brine shall be clear. It must not contain debris which will filter out on the surfaces of the sands around the well mouth and prevent continued disposal. The Scaife filter is a pressure chamber of steel, protected against brine corrosion. It is provided with a coated cast-iron underdrain distributor and many layers of graded silica gravels supporting a fine top layer of silica filter material.

The unit is free from duo metal couples, which are the cause of serious electrolytic corrosion. The specially designed coated cast-iron flared underdrain distributor eliminates the need of concrete underfill. Not only does this save erection costs, but it prevents concrete honeycombing conditions within the units. Deeper supporting beds, larger supporting gravels and more grades are placed in this improved design.

Crane Co. Develops Valve for High-Pressure Steam Lines

A new line of brass screwed-end globe and check valves for 350 pounds steam pressure at 550° temperature is offered by Crane Co., Chicago. These valves are designed especially for high-pressure steam lines such as are used on oil- and gas-field boilers for deep-well drilling operations.



They also may be used on nonshock cold-water, oil or gas lines up to 1,000 pounds. Their sizes range from one-half inch to 2 inches.

The globe-pattern brass valve is of the union bonnet design (except the 2-inch, which has a bolted bonnet) and has Crane nickel-alloy plug-type disc and Exelloy body seat ring. The stuffing-box, supplied with a gland, is filled with high-grade packing, which may be replenished when the valve is wide open and under pressure.

The horizontal-lift check valve also has a union bonnet (except the 2-inch, which has a bolted cap). Discs are of the piston-guided type, and seats are renewable screwed-in rings of Crane nickel alloy. The horizontal-swing check valve, which may be used for either horizontal or upward flow, has screwed cap and tapped hole in the body to facilitate regrinding of the disc.

In order to have a companion line of brass gate valves for this same service, a 350-pound steam rating at 550° F. has been added to the regular Crane No. 230-H brass gate valves.

Dr. Leslie Joins Blaw-Knox

Dr. E. H. Leslie, authority on the chemical process industries, has joined the technical staff of the Blaw-Knox Co. Pittsburgh, Pa. He will have supervision of the design and fabrication of operating units for the chemical and oil refining industries.

Doctor Leslie is best known to the industrial world for his work as consulting engineer and for his operation, since 1923, of the Leslie Laboratories in Ann Arbor, Mich. Through his researches he has been influential in the application of advanced chemical engineering to the problems of the chemical, petroleum refining, and processing industries generally. He received his bachelor's degree at the University of Illinois, with the class of 1913, and the degree of Doctor of Philosophy at Columbia in 1916. For eight years he was professor of chemical engineering at the University of Michigan.

Hughes Resigns From Eastman

James D. Hughes, for years active in the management of the Eastman Oil Well Survey Co., Houston, Tex., has resigned as vice president of that organization.

Oil Man's Calendar

December

30-31—Austin, Tex. Eleventh biennial convention Sigma Gamma Epsilon, honorary geological fraternity, University of Texas.

1938

January

10-14—Detroit, Mich. Society of Automotive Engineers, Book-Cadillac Hotel.

13—Oklahoma City, Independent Oil Jobbers Association of Oklahoma.

17-21—Cleveland, Ohio, American Road Builders Association.

24-25—Minot, N. D., Northwest Petroleum Association, North Dakota Division.

27-28—Minneapolis, Minn., Northwest Petroleum Association, Minnesota Division, Hotel Radisson.

February

7-9—Louisville, Ky., Kentucky Petroleum Marketers Association, Brown Hotel

14-18—New York, American Institute of Mining and Metallurgical Engineers, annual meeting, Engineering Societies Building.

22-24—Columbus, Ohio, Ohio Petroleum Marketers Association, fifteenth annual convention and marketing exposition, Deshler-Wallick Hotel.

March

2-3—Indianapolis, Ind., Indiana Independent Petroleum Association, spring meeting.

7—Rochester, N. Y., American Society for Testing Materials, Spring Regional Meeting and Group Committee Meetings.

16-8—New Orleans, twenty-third annual meeting American Association of Petroleum Geologists, Roosevelt Hotel.

24-25—Fort Worth, Tex. American Petroleum Institute, Division of Production, spring meeting, southwestern district, Blackstone Hotel.

April

13-15—Cleveland, Ohio, National Petroleum Association.

13-15—Houston, Tex., Petroleum Industry Electrical Association.

17-21—Dallas, Tex., American Chemical Society.

20-22—Buffalo, N. Y., American Institute Mining and Metallurgical Engineers, Open Hearth Conference.

28-29—Pittsburgh, Pa. Spring meeting, Eastern District, A.P.I. Division of Production, William Penn Hotel.

May

14-21—Tulsa. International Petroleum Exposition.

23-25—Wichita, Kans. American Petroleum Institute eighth midyear meeting.

(?)—New Orleans, La. American Gas Association, Natural Gas Department.

(?)—Tulsa, Okla., Natural Gasoline Association of America.

June

6—Houston, Tex. Oil Workers International Union.

16-18—Pittsburgh, Pa. Pennsylvania Grade Crude Oil Association.

Michigan State Land Sale Will Be Held in January

SAGINAW, Mich., Dec. 13.—The Michigan Conservation Commission, which a month ago put a ban on leasing of state-owned lands for oil and gas exploration, in the belief it was "better conservation" to keep the oil in the ground than bring it forth on a weak market, has relented and will offer 9,709 acres of state lands for leasing.

The mineral rights will be auctioned early in January. Most of the lands to be leased are in Gladwin County, scene of the rich Buckeye field, though part of the acreage is scattered through Arenac, Mecosta, Midland, Ogemaw and Saginaw counties.

The commission, however, set up as a fixed policy the decision to limit leasing of its lands to those applied for in or near producing areas or in the vicinity of drilling wildcats, where the statet acreage is not sufficient to have any material effect on the rate of development.

A lands division report informed the commission that the state now has under lease 255,588 acres, or only 17 per cent of the possible oil and gas lands it owns. There are 115 producing oil wells on state lands and 2 gassers.

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PUBLIC SALE OF PROPERTY
FORMERLY USED BY INTEROCEAN OIL COMPANY
AND LOCATED AT EAST BROOKLYN, BALTIMORE, MARYLAND
ON
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at 12 O'CLOCK NOON
AT THE COURT HOUSE DOOR, BALTIMORE, MARYLAND

Contains about 106 acres of land with about 1,600 feet of water front on Curtis Bay, slip 75' x 400', 28' deep, near 35' Channel. Joint use of wharf 520' long with Texas Company. Ingress and egress by paved city streets and near street car line. Complete railroad facilities by both land and car floats.

For detailed description of property and terms of sale apply to G. Ridgely Sappington, Esq., Baltimore Trust Building or J. Cookman Boyd, Esq., 2 E. Lexington Street, Baltimore, Maryland, or Joseph P. Connor, East Brooklyn, Baltimore, Maryland.

Leases and Drilling Blocks

SECURITY ABSTRACT COMPANY
El Dorado, Arkansas
Fee, Lease & Mineral Ownership on short notice. Ownership maps.

Specializing leases twenty acres up dollar acre, East Tex., La., S. Ark. Owners—Attorney, Box 1122, Little Rock, Arkansas.

"FARM-OUTS" IN PROVEN AREAS

Wish to contact responsible operators and drilling contractors able to take over immediate drilling of several leases in Permian Basin fields—depths 1,600 to 3,500 feet—allowables up to 75 barrels daily—Please give information as to financial ability when replying — Address "Land Dept," Box J-152, The Oil and Gas Journal, Tulsa, Oklahoma.

OIL LEASES FOR SALE

8,500 acres, 10 year leases. $1.00 rental. In White and Gallitan County, Illinois. South of the Clay City and Noble deep basin field. $1.00 an acre with well to be drilled. 160-acre proven oil lease in the Western Kentucky shallow district. Two pumping wells and other good drilling locations. $25.00 per acre. 85-acre oil lease adjoining lease with three pumping wells, fourth well now drilling in the Western Kentucky shallow district. $15.00 per acre. Joel Bailey, 309 Mercantile Bldg., Evansville, Ind.

DRILLING DEAL WANTED

40 Acres in the Clay City Field, with production on four sides. Address Box J-170, The Oil and Gas Journal, Tulsa, Okla.

Leases and Drilling Blocks

BIG MONEY PLAY. K.M.A. to Bryson trend. Deep wells drilling or located. Buy protection leases before you regret. Write Trustee, Box 636, Olney, Texas.

New Mexico OIL LEASES WHOLESALE
40 acres at a time.
Roy G. Barton, Clovis, New Mexico.

FOR SALE by owners, ten year paid up oil and gas lease, corners Llano, Gillispie, Blanco counties, Texas; 3958¾ acres at $1.00 per acre. L. J. Smith, 321 Piedmont St., San Antonio, Texas.

HELP to drill test well Illinois Basin. I have rig, pipe, leases and geology. Give half for fuel and labor money. A. M. Masters, Murrayville, Illinois.

FOR SALE: 7/10ths working interest in 40 acre lease Seminole. One well producing 12 bbls.; one well not pumping; one undrilled location; other 3/10ths owned by major company. Lease well equipped. Wilcox production. 508 Alexander Building, Tulsa, Okla.

Leases and Drilling Blocks

SELLING Crane County, Texas, Sec. 18, B-28, nearby Magnolia's Pecos High Ordovician, bargain. Address Landowner, 4009 Ave. G, Austin, Tex.

KANSAS oil and gas lease of 320 acres about three-eighths of a mile from a new well that came in for better than 100 barrels, at 750 feet. Address Box 10, Kincaid, Kans.

WANT someone to handle some Real Estate papers draw ten per cent interest. For sale half interest in four hundred thousand dollars worth of Real Estate. Fifty-five thousand dollars cash. Charlie Priolo, 2301 W. 6th St., Amarillo, Texas.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Patent Attorneys

JACK A. SCHLEY
PATENT LAWYER

Patents obtained — infringement practice in all Courts—oil field experience. 1807-11 Tower Petroleum Bldg., Dallas. 2014 Second Nat'l. Bank Bldg., Houston. 707 Insurance Building, San Antonio. 433 Munsey Building, Washington, D. C. Address any of these offices.

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4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

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Tulsa, Oklahoma